

CHESTERFIELD COUNTY

www.chesterfield.gov/ManagementServices/Purchasing/purchase.asp

Our vision is to be recognized by our customers and professional peers as an innovative provider of excellence in customer service and as a leader in the purchasing profession.

Our mission is to support our customers in performing their mission by providing quality purchasing services.



INVITATION FOR BID

Purchasing Department
9901 Lori Road
P. O. Box 51
Chesterfield, VA 23832-0001
Telephone No. (804) 748-1617

**CHESTERFIELD COUNTY PURCHASING DEPARTMENT
GENERAL TERMS, CONDITIONS, AND INSTRUCTIONS
IMPORTANT - READ CAREFULLY BEFORE SUBMITTING BID**

1. SUBMISSION AND RECEIPT OF BIDS:

- a. Sealed bids shall be received until, but no later than the specified time and date of opening as designated in the invitation. Late bids shall be rejected. **Bids, to include addenda or changes to a response, shall not be accepted via a FAX machine or by Internet E-mail.**
- b. In the event that Chesterfield County government offices are closed due to inclement weather and/or emergency situations at the time set aside for a pre-bid meeting and/or the published bid opening, the pre-bid meeting and/or bid opening date will default to the next open business day at the same time.
- c. All bids shall be signed on the Terms and Signature Sheet in order to be considered. Bids submitted without a signature shall be rejected. If the Bidder is a partnership or corporation, the Bidder shall show the title of the individual signing the bid, and if the individual is not an officer of the partnership or corporation, if requested, the Bidder shall submit proof that the individual has the authority to bind the partnership or corporation.
- d. **Only when specifically requested in the bid documents** shall each bid be accompanied by a bid bond with surety satisfactory to the County Attorney or a Cashier's or a Certified Check, made payable to the Treasurer, Chesterfield County. In the event of default by the Bidder, the deposit shall be and represent liquidated damages to the County. Bids received without a bid bond, when specifically requested, shall be rejected.
- e. Bids concerning separate bid invitations are not to be combined on the same form or placed in the same envelope. Bids submitted in violation of this provision may not be considered.
- f. Unless otherwise specified, Bidders are to use the bid form furnished by the County.
- g. No bid shall be altered or amended after the specified time for opening.

2. **AMENDING BIDS:** Amending or withdrawing bids by a potential bidder prior to bid opening: A potential bidder may amend and/or withdraw a bid before the due date and time set for receipt of bids. All requests from a potential bidder to return their bid shall be in writing, addressed to the Purchasing Department, and signed by a person authorized to represent the person or firm that submitted the bid. The potential bidder may be contacted by telephone to verify the authorization of the return request and the signature involved if there is doubt as to the documents authenticity. All amendments/alterations to the bid are to be initialed by an individual authorized to represent the person or firm that submitted the bid.

3. WITHDRAWAL OF BIDS:

Withdrawal: Construction (*Code of Virginia 2.2-4330*)

- a. A bidder for a public construction contract, other than a contract for construction or maintenance of public highways, may withdraw of his bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake therein, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or unintentional omission of a quantity of work, labor, or material made directly in the compilation of a bid which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. If a bid contains both clerical and judgment mistakes, a bidder may withdraw his bid from consideration if the price bid would have been substantially lower than the other bids due solely to the clerical mistake, that was an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a bid which shall be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn.

No bid may be withdrawn after the scheduled closing time for receipt of bids for sixty (60) calendar days, except as provided in Section 2.2-4330(A)(i), *Code of Virginia*, which states the bidder shall give notice in

writing of his claim of right to withdraw his bid within two business days after the conclusion of the bid opening procedure. Any withdrawal request made to the Director of Purchasing must be accompanied by bidder's original work papers, or such request will be rejected. In order for work papers, documents and materials submitted pursuant to this section to be deemed a trade secret or proprietary information pursuant to *Code of Virginia*, subdivision F of 2.2-4342, a bidder must expressly invoke the aforementioned statute in the notice of withdrawal and specifically state the reasons why protection under 2.2-4342-F is necessary.

Withdrawal: (other than construction)

- b. A bidder for a public contract may request withdrawal of his bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake therein, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or unintentional omission of a quantity of work, labor, or material made directly in the compilation of the bid which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. If a bid contains both clerical and judgment mistakes, a bidder may request withdrawal of his bid from consideration if the price bid would have been substantially lower than the other bids due solely to the clerical mistake, that was an unintentional arithmetic error or an unintentional omission of a quantity of work, labor or material made directly in the compilation of a bid which shall be clearly shown by objective evidence drawn from inspection of original work papers documents and materials used in the preparation of the bid sought to be withdrawn. In order for work papers, documents and materials submitted with the notice of withdrawal to be deemed a trade secret or proprietary information pursuant to *Code of Virginia*, subdivision F of 2.2-4342, a bidder must expressly invoke the aforementioned statute in the notice of withdrawal and specifically state the reasons why protection under 2.2-4342-F is necessary.

4. DENIAL OF WITHDRAWAL OF BID: (Code of Virginia 2.2-4330)

If the County denies the withdrawal of a bid, it shall notify the bidder in writing stating the reasons for its decision and award the contract to such bidder at the bid price, provided such bidder is a responsible and responsive bidder.

5. MISTAKES IN BIDS

- a. Mistakes discovered following bid opening but prior to award: If there is a significant and obvious disparity between the prices of the lowest apparent responsive bidder and other bidders, the low bidder may be contacted by the purchasing authority to confirm the bid price. This does not relieve a bidder from the responsibility for the submission of a correct bid. If the bidder then alleges a mistake in the bid and can provide clear and convincing evidence that supports the existence of a clerical error to the satisfaction of the purchasing authority, the bid may be withdrawn only after approval by the County.
- b. Mistakes discovered after award: Bids containing mistakes by bidders shall not be withdrawn after award of a contract or issuance of a purchase order.

6. PRICING:

- a. Bidder warrants by virtue of bidding that prices, terms and conditions quoted in his bid will be firm for acceptance for a period of sixty (60) days from the date of bid opening unless otherwise stated by the County or Bidder.
- b. Prices should be stated in units of quantity as specified in the bid form. In case of error in extension of prices in the bid, the unit price shall govern.
- c. When a bid is for goods and/or services to be delivered on a one time only or staggered basis, only firm pricing shall be given consideration. General terms such as "price in effect at time of delivery" shall not be considered for award.

7. PERFORMANCE AND PAYMENT BOND: When requested in the bid, the County shall require the successful bidder to furnish a performance bond and labor and material payment bond with surety satisfactory to the County Attorney in the amount of the contract price at the time of or prior to execution of the contract. If bonds are

requested in the bid, the successful Bidder shall pay the cost thereof; if not specified, the successful Bidder, when requested to do so, shall secure the bonds and the County shall pay the cost thereof.

8. **DELIVERY POINT AND TERMS:** All items shall be delivered F.O.B. destination, and freight, delivery costs, and incidental charges shall be included in the bid price(s). Failure to do so may be cause for not making award to a Bidder. The Bidder shall assume all liability and responsibility for the delivery of merchandise in good condition to the specified delivery location(s).
9. **INVOICES:** Invoices for items ordered and delivered shall be submitted by the contractor to Chesterfield County Accounting Department, P. O. Box 40, Chesterfield, VA 23832. All invoices shall show the purchase order number, the name of the person placing the order, the item description, stock number, and contract price as applicable. The County's obligation to pay amounts due under the contract shall be contingent upon receipt by it of invoices in sufficient detail to permit identification of the items as described in the specifications.
10. **PAYMENT TERMS:** If discounts for prompt payment are offered by the bidder, it is required that a minimum of twenty (20) days be allowed for payment. Discounts for prompt payment will not be considered in the evaluation of bids. Discounts for prompt payment will be shown on the purchase order/contract and taken if invoices are processed and payment made within the stipulated time frame. If discounts are not offered, payment shall be made thirty (30) days after receipt of an accurate invoice by the County.
11. **FINANCE CHARGES:** Finance charges imposed by the vendor on any invoice shall not be paid by the County.
12. **USE OF BRAND NAMES/SUBSTITUTIONS:** Unless otherwise specified in the invitation to bid, the name of a certain brand, make or manufacturer does not restrict bidders to the specific brand, make or manufacturer named; it conveys the general style, type, character, and quality desired, and any product which the County in its sole discretion determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted.

In requesting a proposed substitution, the bidder shall submit with the bid form the name of the manufacturer, model number, and complete specifications on the proposed substitution for evaluation by the County. The bidder shall submit, with the bid form, a detailed list of any deviations from these specifications, written or implied. The bidder assumes responsibility for all changes in the work required as a result of the proposed substitution, including any change not listed in the request, but determined by the County to be necessary at a later point of progress in the work.

It shall be understood that the burden of proof for an "equal" product shall be and remain the sole responsibility of the bidder. The County's failure to object to a manufacturer shall not constitute a waiver of any of the requirements of the contract documents, and all products furnished by the listed manufacturer must conform to such requirements. The County's decision of approval or disapproval of a proposed substitution shall be final.
13. **QUALITY:** All materials used for the manufacture or construction of any supplies, materials, or equipment covered by this bid shall be new. Unless otherwise specified in bid, products bid must be new, the latest model, the best quality, and the highest grade workmanship.
14. **ACCEPTANCE OF MATERIAL:** The goods and/or services delivered as a result of this bid shall remain the property of the seller until a physical inspection is made, and thereafter accepted to the satisfaction of the County. In the event the goods and/or services supplied to the County are found to be defective or do not conform to specifications, the County reserves the right to cancel the order upon notice (verbal or in writing) to the seller and return goods to seller at the seller's expense.
15. **COPYRIGHTS OR PATENT RIGHTS:** The bidder certifies by submission of bid that there has been no violation of copyrights or patent rights in manufacturing, producing, or selling the product or services shipped or ordered as a result of this bid. The successful bidder shall, at his own expense, defend any and all actions or suits charging such infringement, and will save Chesterfield County, its officers, employees, and agents harmless from any and all liability, loss, or expense incurred by any such violation.
16. **SAMPLES:** Evidence in the form of samples may be requested if brand being quoted upon is other than as specified. The County reserves the right to request that such samples be furnished at the time of bid opening. The County also reserves the right to request samples after the date of bid opening. Requested samples shall be

furnished free of expense to the County and if not used in testing or destroyed, will, upon request at the time of submission of sample, be returned at the bidder's expense.

17. **TAXES:** Chesterfield County is exempt from payment of Federal Excise Tax and State and Local Sales and Use Tax on all tangible personal property purchased or leased by Chesterfield County for its use or consumption. Tax exemption certification will be furnished upon request. Sales tax, however, is paid by Chesterfield County on materials and supplies that are installed by a contractor and become a part of real property. Contractors are not exempt from paying taxes on these categories, as they are considered to be a cost of doing business and should be considered in pricing when preparing a bid.
18. **LICENSES, PERMITS, AND FEES:** All bids submitted shall have included in price the cost of any business and professional licenses, permits, or fees required by Chesterfield County or the Commonwealth of Virginia.
19. **SIGNED BID CONSIDERED AN OFFER:** This signed bid shall be considered an offer on the part of the bidder and shall be deemed accepted upon approval by Chesterfield County. In case of default by the successful bidder, or failure to deliver the goods and/or services ordered by the time specified, the County may terminate the purchase order and/or contract, and after due notice (verbal or in writing) may procure them from other sources and hold the defaulting bidder liable for any resulting additional cost.
20. **QUALITY EXPECTATION STATEMENT:** Chesterfield County, through its "Total Quality Improvement" initiative, is a recognized leader in providing quality products and services at the most effective cost possible. Therefore, the County fully expects, requires, and shall hold all Contractors, and all agents, staff, representatives, and subcontractors of the Contractor, responsible for, and accountable to, the highest quality standards of professional workmanship, products and services. In the spirit of the County's total quality improvement initiative, the Contractor shall be expected to become a member of the team and perform or provide all work, services and products with a target of "zero defects - zero rework".
21. **AWARD PHILOSOPHY:** Award will be made by the County to the lowest responsible bidder with the lowest responsive bid which is in substantial conformance with the terms, conditions, and specifications of the bid and is in conformance with the *Code of Chesterfield County* and the *Code of Virginia*.

Chesterfield County reserves the right to accept or reject any or all bids or parts of bids, to waive informalities, and to request rebids. The County also reserves the right to award the bid in a manner which the County deems will best serve its interest. Bids making exceptions to the terms and conditions included in this invitation may be considered, but preference may be given to bids with no exceptions taken. It further reserves the right to award the bid on a split order basis, lump sum, or individual item basis, or such combination as shall best serve the interest of the County, unless otherwise specified. The County may award a bid to a single contractor or to multiple contractors. It also reserves the right to increase or decrease quantities at the unit price bid.

22. **FACTORS OTHER THAN PRICE IN AWARD DECISION:** The following factors in addition to price (as they apply) shall be a consideration in the award decision:
 - a. The ability to provide references which may substantiate past work performance and experience in the type of work required for the contract. The lowest responsive bidder(s) may be required to furnish a contractor qualifications statement, to include references, prior to any such award. The County may contact all references furnished by bidders. The right is further reserved by the County to contact references other than, and/or in addition to, those furnished by the bidder. If, in the sole opinion of the County, a bidder is determined to be non responsible as a result of any investigation conducted by or for the County, award will not be made to that bidder.
 - b. The quality of performance/workmanship of previous contracts for goods and/or services delivered to or performed for the County.
 - c. The timely completion of previous contracts for services or the timely delivery of past orders for goods.
 - d. The sufficiency of financial resources and its impact on ability of the bidder to perform the contract or provide the services.

- e. The County reserves the right, at its option, to conduct on-site inspections of any bidder's facilities prior to award. The results of any such inspection will be considered by the County in determining bidder's capabilities of successfully administering the contract.
 - f. The ability and availability of the bidder to provide both quality and timely maintenance, service, and/or parts.
 - g. The resale value, life cycle costing and value analysis of a product.
 - h. The availability and capability of local and regional vendor support as it affects the quantity, quality, and timeliness of the goods and/or services.
 - i. Timely delivery of goods or timely completion of services as stated by bidder.
 - j. Substantial compliance or noncompliance with specifications set forth in bid as determined by the County.
 - k. Inventory capability as it relates to a particular bid.
 - l. Results of product testing.
23. **STATE REGISTRATION OF CONTRACTORS (IF APPLICABLE):** Attention is directed to Chapter 11, Title 54.1 of the *Code of Virginia* (Re: State registration of contractors when applicable), which requires that all bidders shall show evidence of the proper license under the provision of this chapter before such bid is considered.
24. **INTERPRETATION OF BID:** If any party contemplating the submission of a bid on this invitation is in doubt as to the true meaning of any part of the bid, the Purchasing Department should be contacted. Any change to the Invitation to Bid will be made only by written addendum mailed to prospective bidders at the addresses furnished for such purposes. The County will not be responsible for any changes except as noted through a written addendum.
25. **PROPRIETARY INFORMATION:** Section 2.2-4342-F of the *Code of Virginia* states: "Trade secrets or proprietary information submitted by a bidder, offeror, or contractor in connection with a procurement transaction or prequalification application submitted pursuant to subsection B of 2.2-4317 shall not be subject to the Virginia Freedom of Information Act (2.2-3700 et seq.); however, the bidder, offeror, or contractor shall (i) invoke the protections of this section prior to or upon submission of the data or other materials, (ii) identify the data or other materials to be protected, and (iii) state the reasons why protection is necessary." Bids/proposals not in compliance with section 2.2-4342F will be subject to disclosure.
26. **GOVERNING LAW:** Any contract resulting from this Invitation to Bid shall be governed by the provisions hereof and by the laws of the Commonwealth of Virginia. Any dispute arising out of this Contract shall be resolved in the Courts of the Commonwealth of Virginia, in and for Chesterfield County.
27. **TIE BIDS:** In the case of a tie bid, the County may give preference to goods, services, and construction produced in the County or provided by persons, firms or corporations having principal places of business in the County. If such choice is not available, preference shall then be given to goods and services produced in the Commonwealth pursuant to Section 2.2-4324 of the Code of Virginia. If no County or Commonwealth choice is available, the tie shall be decided by lot.
28. **NONASSIGNMENT:** Parties to any resulting contract shall not assign the contract without written consent of the other(s). If any party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the contract.
29. **MODIFICATION:** The resulting contract shall not be amended, modified, or otherwise changed except by the written consent of the Contractor and the County given in the same manner and form as the original signing of the Contract.
30. **AUDIT OF VENDOR RECORDS:** The County reserves the right to audit all vendor records in contracts where payments are based on contractor's records of time, salaries, materials, or actual expense.

31. **NEGOTIATION:** If the bid from the lowest responsible bidder exceeds available funds, the County may negotiate with the low bidder to obtain a contract price within available funds.
32. **SECTION 2.2-4311 CODE OF VIRGINIA:** Every contract for goods or services over \$10,000 shall include the following provisions:
1. During the performance of this contract, the Contractor agrees as follows:
 - a. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
 2. The Contractor shall include the provisions of the foregoing paragraphs a, b, and c in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
33. **APPROPRIATION OF FUNDS:** The continuation of the terms, conditions, and provisions of any resulting contract beyond June 30 of any year, the end of the County's fiscal year, are subject to approval and ratification by the Chesterfield County Board of Supervisors and appropriation by them of the necessary money to fund said contract for each succeeding year.
34. **SCHOOL BOARD:** When goods and/or services are for the benefit of Chesterfield County Schools, the contract shall be entered into on behalf of the Chesterfield County School Board.
35. **REQUIREMENTS CONTRACTS:**
- a. Whenever a bid is sought seeking a source of supply for a requirements contract for goods and/or services, the quantities or usage shown are estimates only. No guarantee or warranty is given or implied by Chesterfield County as to any minimum or total amount that may or may not be purchased from any resulting contracts.
 - b. The County reserves the right, at its sole option, to renew the contract for consecutive terms.
 - c. The County reserves the right to award bids for requirements contracts based on the pricing of the initial term of the contract or any combination of initial and renewal terms.
 - d. The County may award a bid to a single contractor or to multiple contractors.
 - e. The County reserves the right not to renew the contract at the end of the initial term or any subsequent term.
 - f. The County reserves the right to terminate the contract upon written notice to the contractor(s).
 - g. In the event that a requirements contract is awarded for goods and/or services, the County reserves the right to bid individual bulk purchases if the County deems it will best serve their interest.
 - h. It is understood and agreed to between the parties in a resulting contract that Chesterfield County shall not be obligated to purchase or pay for materials under such contract unless and until they are ordered and delivered.
 - i. Bids based on a firm price or those including a "downward escalator" clause for a requirements contract term may be given preference over lower ones bearing an "escalator" clause.

- j. The County has the right to extend this contract up to and not to exceed one hundred eighty (180) days following the last term of renewal.

36. SECTION 2.2-4312 CODE OF VIRGINIA - DRUG FREE WORKPLACE

During the performance of this contract, the contractor agrees to:

- a. Provide a drug-free workplace for the contractor's employees
- b. Post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition
- c. State in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace
- d. Include the provisions of the foregoing clauses in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with this chapter, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

- 37. ENVIRONMENTAL MANAGEMENT:** Contractor shall be responsible for complying with all applicable federal, state, and local environmental regulations, if any. Additionally, the Contractor must meet all Chesterfield County Environmental Management System (EMS) requirements. For questions or additional information, contact the Office of Environmental Management at (804)717-6531.

- 38. SECTION 2.2-4343.1 CODE OF VIRGINIA:** Chesterfield County does not discriminate against faith-based organizations.

CHESTERFIELD COUNTY PURCHASING DEPARTMENT
CHESTERFIELD, VIRGINIA 23832-0001
(804) 748-1617

IFB Prepared By:

**Cathy M. Lantz, CPPB
Senior Contract Officer**

Invitation for Bid Number:

06-3910-9354

September 14, 2006

Sealed bids, subject to the specifications and conditions contained herein and attached hereto, will be received in the Purchasing Department, Chesterfield Administration Building, Room 402, until, but no later than **3:00 p.m.** Local Time Prevailing **October 9, 2006**, and then publicly opened and read aloud for **furnishing all labor, equipment and materials necessary for Renovations to Existing Home Team Bleachers at Midlothian Middle School and Manchester Middle School, Paving an Existing Gravel Path and Construction of Handicap Parking Spaces at Manchester for the Chesterfield County Parks Department.**

If you are an individual with a disability and require a reasonable accommodation, please notify the Purchasing Department (804) 748-1617, three working days prior to need.

To be considered, your bid must be submitted on a copy of this Invitation for Bid. Bidders shall sign this form in the space provided on the Terms and Signature Sheet and return bid document to: Chesterfield County Purchasing Department, Administration Building - Room 402 - Fourth Floor, 9901 Lori Road, P.O. Box 51, Chesterfield, VA 23832-0001. **Mark outside of your envelope with Invitation for Bid #06-3910-9354 opening date of bid.**

Bids, to include addenda or changes to a response, shall not be accepted via Fax machine or by Internet E-mail.

Time is of the essence and any bid received after the announced time and date for submittal, whether by mail or otherwise, will be rejected. The time of receipt shall be determined by the time clock stamp in the Purchasing Department. Bidders are responsible for ensuring that their bids are stamped by Purchasing Department personnel before the deadline indicated. **Late bids received will be so noted in the bid file in order that the vendor's name will not be removed from the subject commodity/service list.**

Nothing herein is intended to exclude any responsible vendor, his product or service or in any way restrain or restrict competition. All responsible vendors are encouraged to bid.

For information pertaining to the bid tabulation and award on this procurement transaction, bidders may access public notification electronically at www.chesterfield.gov/ManagementServices/Purchasing/purchase.asp.

COMMITMENT TO DIVERSITY AND CHESTERFIELD BUSINESSES

Chesterfield County is a rapidly growing progressive community consisting of an increasingly diverse population. This diversity provides for a dynamic and robust community that promotes growth. Chesterfield County believes that all of its citizens should benefit from this economic growth without regard to race, color, religion or economic status.

The county is committed to increasing the opportunities for participation of minority business enterprises, woman-owned businesses and businesses located in Chesterfield County to ensure diversity in its procurement and contract activities. These businesses are encouraged to respond to all Invitations for Bids and Requests for Proposals. In addition, the county strongly encourages each contractor and/or supplier with which the county contracts to actively solicit minority business enterprises, woman-owned businesses and businesses located in the county as subcontractors/suppliers for their projects.

Upon award/renewal of the contract, the successful bidder/offeror shall furnish data requested on the Certification of Subcontractor/Supplier Activity form included in this IFB/RFP document. This information will enable the county to document the dollar level of activity and measure the success of its purchasing and contracting efforts in this endeavor.

DEFINITIONS

For purposes of Chesterfield County's classification and reporting program, in cooperation with the Virginia Department of Minority Business Enterprise, the following definitions apply:

Woman-Owned Business (WOB) - a business concern that is majority owned by a woman who also controls and operates the business. In this context, "control" means exercising the power to make policy decisions, and "operate" means being actively involved in the day-to-day management.

Minority Business Enterprise (MBE) - a business enterprise that is owned and controlled by one or more socially and economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic circumstances or background or other similar cause. Such persons include, but are not limited to: Blacks, Hispanic Americans, Asian Americans, American Indians, Eskimos and Aleuts. (Reference: 2.2-1401 of the *Code of Virginia*)

Chesterfield Business (CB) - any private business enterprise, located within the jurisdictional boundaries of Chesterfield County.

CERTIFICATION OF SUBCONTRACTOR/SUPPLIER ACTIVITY
MINORITY BUSINESS ENTERPRISES, WOMAN-OWNED BUSINESSES
AND CHESTERFIELD BUSINESSES

Project/Contract Name/Number:

Contractors shall furnish the information requested below regarding subcontractor(s) or supplier(s).

(This form will be sent by the Purchasing Department to the contractor for completion at the time of award/renewal, as appropriate.)

Name and Address of Subcontractor/Supplier	(T) MBE	(T) WOB	(T) CB	Commodity or Service	Dollar Amount

If a continuation of this list of subcontractors/suppliers is needed, please attach additional pages to this form.

I have no MBE, WOB or CB applicable to this contract _____(T)

Contractor hereby certifies that the above information is correct.

Complete Legal Name of Firm: _____ Date:_____

Form Prepared By:_____ (Type or Print)

DEFINITIONS

1. **ADDENDUM or ADDENDA** – Shall mean the additional contract provisions in writing by the County prior to the receipt of bids.
2. **BID** - The proposal submitted by a Bidder on the Bid Form consistent with the Instructions to Bidders, to complete the Work for a specified sum of money and within a specified period of time.
3. **BIDDER** - An individual, firm, partnership or corporation qualified in accordance with the Virginia Public Procurement Act, and approved by the County, that submits a Bid for the Work, either directly or through a duly authorized representative.
4. **BID DOCUMENTS** - All Contract Documents that the County or Engineer provides to potential Bidders before the time established for the submission of Bids.
5. **BID SECURITY** - The bond, with corporate surety, supplied by a Bidder to the County, and in all respects satisfactory to the County's Attorney, that guarantees the Bidder's compliance with the Contract Documents. A certified check or cashiers check payable to the County, delivered with the Bid, may also constitute a Bid Bond.
6. **CHANGE ORDER** - An amendment or modification to the Contract properly executed by authorized representatives of the County and the Contractor on the form provided in the Contract Documents.
7. **COMPLETION OF THE WORK** - The event that occurs when (1) the Work has been completed, successfully tested and approved in accordance with the Contract Documents, (2) all submittals required by the Contract Documents (including Operation and Maintenance manuals) have been made, and (3) all Punch List items and restoration Work required by the Contract Documents has been completed.
8. **CONSULTANT** – Shall mean a representative designated by the County as consultant for the project, to act as such and designated to be in charge of the work, acting directly through duly authorized representatives of the County.
9. **CONTRACT BONDS** - The Performance Bond and Labor and Material Payment Bond executed by the Contractor, with corporate surety and otherwise acceptable in all respects to the County's Attorney.
10. **CONTRACT DOCUMENTS** - The Notice to Bidders, Advertisement, General Terms, Conditions and Instructions, Definitions, Pricing Schedule, Bid Bond, Bond Requirements, Contract, Special Conditions, Supplementary General Conditions, Insurance Provisions (including Instructions Regarding Insurance Certificates), Labor and material payment Bond, Performance Bond, Notice of Award, Notice to Proceed, Escrow Agreement (when used), Change Orders, Drawings, Specifications and Addenda, Special Provisions and any other document incorporated by reference into one of these documents.
11. **CONTRACT PRICE** - The amount of money which the County and the Contractor have agreed that the County will pay to the Contractor for performing and completing the Work.
12. **CONTRACTOR** - The party who has contracted to perform and complete the Work.
13. **ENGINEER** - The Consulting Engineer who has been designated by the County as Engineer for the project, and the Engineer's authorized agents, inspectors or representatives.
14. **EXTRA WORK** – Shall mean work other than that required, either expressed or implied, by the Contract in its present form.
15. **FINAL ACCEPTANCE** - The event that occurs when the Engineer issues to the County or the County issues to the Contractor a written statement that the Contractor has completely performed all Punch List items, has made all necessary submittals to the County and/or Engineer and has satisfied all of the Contractor's obligations under the Contract Documents.

16. **FINAL INSPECTION** - The inspection conducted by the County or Engineer to determine what items of the Work must be completed by the Contractor in order for Completion of the Work to occur. After the Final Inspection is conducted, the County or Engineer shall provide the Contractor with a Punch List that the Contractor must complete in order for Completion of the Work to occur. The County may perform the Final Inspection instead of, or together with, the Engineer.
17. **FINAL PAYMENT** - Payment by the County to the Contractor after Completion of the Work so that the Contractor has received all payments due him under the terms of the contract documents for performing and completing the Work.
18. **INSPECTOR** - The person appointed by the County to carry out instructions given by the County and to inspect the Work performed and the materials supplied by the Contractor.
19. **COUNTY** - Chesterfield County, Virginia, a political subdivision of the Commonwealth of Virginia, and its duly authorized officials, agents and employees.
20. **PLANS** - All drawings or reproductions of drawings that depict or relate to the Work. A pictorial representation of the Work or some portion of the Work, showing design, location and dimensions.
21. **PUNCH LIST** - The list provided to the Contractor by the Engineer or County after Final Inspection that includes all items that the Contractor must complete in order for Completion of the Work to occur.
22. **SITE** – Shall mean the area upon, or in which, the Contractor's operations are carried on and such other areas adjacent thereto as may be designated as such by the County.
23. **SPECIFICATIONS** - The directions, provisions and requirements contained in the Contract Documents relating to the method or manner of performing the Work, or to the quantity or quality of materials to be furnished under the Contract Documents.
24. **SUBCONTRACTOR** - Any individual, firm or corporations having a direct contract with the Contractor for the performance of any part of the Work.
25. **SURETY** – Shall mean any person, firm, or corporation that has executed as surety, the Contractor's performance bond securing the performance of this Contract.
26. **TIME OF COMPLETION** - The time agreed upon by the County and the Contractor in the Contract by which the Contractor is required to accomplish Completion of the Work, plus any extensions of time granted to the Contractor by the County pursuant to the Contract Documents.
27. **THE WORK** - The whole and any part of the construction, labor, materials, equipment, incidentals or services necessary for the Contractor to achieve Completion of the Work as required by the Contract Documents.

PURPOSE

The purpose of this Invitation for Bid (IFB) is to solicit bids for furnishing all labor, equipment and materials necessary for Renovations to Existing Home Team Bleachers at Midlothian Middle School and Manchester Middle School, Paving an Existing Gravel Path and Construction of Handicap Parking Spaces at Manchester for the Chesterfield County Parks Department.

SPECIAL CONDITIONS

PRE-BID CONFERENCE – (NON-MANDATORY)

A Pre-Bid Conference will be held on September 26, 2006 at 10:00 a.m. The conference will begin at: **Parks Maintenance, 9201 Public Works Road, Chesterfield, VA 23832, and then proceed to Manchester Middle School, 7401 Hull Street Road, Richmond, VA 23234 and Midlothian Middle School, 13501 Midlothian Turnpike, Midlothian, VA 23234.** Attendance is encouraged, but not mandatory.

INQUIRIES

Requests for interpretation of plans and specifications should be addressed to Cathy M. Lantz, CPPB, Senior Contract Officer at (804) 748-1701 or Stuart Connock, Jr., Chief of Design and Construction at (804) 751-4484 or (804) 363-2434 to be given consideration and should be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instruction will be in the form of written addenda to the specifications which, if issued, will be mailed or faxed to all prospective bidders (at the respective addresses or fax numbers furnished for such purposes), not later than three days prior to the date established for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve the bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

GUARANTEE

All materials and workmanship shall be guaranteed for a period of twelve (12) months after final acceptance is made by the County and repairs necessary shall be made by the contractor at his expense.

BONDS

Each bid shall be accompanied by a bid bond from a Surety company satisfactory to the County Attorney or a Cashier's or a Certified Check, made payable to: TREASURER, CHESTERFIELD COUNTY, in an amount equal to five percent of the total bid price.

A Labor and Material Payment Bond and a Performance Bond, each in the amount of 100% of the Contract Price, with a corporate surety authorized to do business in the State of Virginia and otherwise acceptable in all respects to the County's Attorney will be required for the faithful performance of the contract.

Attorney's-in-fact who signs Bid Bonds, Labor and Material Payment Bonds and Performance bonds must file with each bond a certified and effective dated copy of their power of attorney. Each Bid Bond and the accompanying power of attorney should bear the same date. Each Labor and Material Payment Bond and each Performance Bond and the accompanying power of attorney should bear the same date as the date of the Contract.

The party to whom the Contract is awarded will be required to execute the Contract and obtain the Labor and Material Payment Bond and the Performance bond within fifteen calendar days from the date when the Notice of Award together with the Contract is delivered to the Bidder for execution. In case of the failure of the Bidder to execute the Contract within the prescribed time, the County may, at his option consider the Bidder in default, in which case the Bid Bond accompanying the Bid shall become the property of the County.

RESPONSIBILITY OF BIDDER

The Bidder should make a careful examination of the project site, familiarize himself with existing conditions, and satisfy himself as to the quantity and quality of materials and workmanship required for the work.

LICENSES, PERMITS, AND FEES: All bids submitted shall have included in price the cost of any business and professional licenses, permits, or fees required by Chesterfield County or the Commonwealth of Virginia.

ACCESS TO COUNTY PROPERTY

Access to the County's property shall be coordinated between Stuart Connock, Jr., Chief of Design and Construction and the Contractor.

DRAWINGS

NOTE: "The drawings are downloadable"

The drawings are being provided electronically for bidders convenience, but the copies of the signed and dated documents are considered the bidding and working drawings/documents.

The drawings, prepared by Hankins and Anderson Consulting Engineers, consist of eleven (11) pages for Manchester Middle School and four (4) pages for Midlothian Middle School. Drawings may also be obtained by contacting the County Purchasing Department at (804) 748-1617, by e-mail at purchasing@chesterfield.gov or by fax at (804) 717-6378.

Bidders may obtain a limit of two (2) sets of drawings at no charge. Additional sets must be purchased (no refund) at a cost of thirty-five (\$35.00) per set, check made payable to: Treasurer, Chesterfield County.

Bidders shall be responsible for any mailing/shipping charges incurred with the distribution of the drawings and/or bid documents. Bidder shall be required to furnish their UPS or Fed-X account number, as applicable. Drawings and/or bid documents may be picked up from the Purchasing Department and no mailing/shipping cost will be incurred.

Bidders shall ensure that the drawings and bid documents are printed properly, and that the print matches the image on the screen prior to using them for bidding or distributing the drawings to sub-contractors.

NOTICE: The Drawings are protected by the common copyright laws of the United States of America. Permission to copy or reproduce these documents in any way or any form whatsoever is not granted without the express written permission of the County/Architect.

INSURANCE

A copy of a Certificate of Insurance shall be required and must be furnished by the contractor during execution of the contract. The Certificate does not need to accompany the bid.

The contractor shall purchase and maintain in force, at his own expense, such insurance as will protect him and the County from claims which may arise out of or result from the Contractor's execution of the work, whether such execution be by himself, his employees, agents, subcontractors, or by anyone for whose acts any of them may be liable. The insurance coverage shall be such as to fully protect the County, the Engineer (if applicable) and the general public from any and all claims for injury and damage resulting by any actions on the part of the contractor or his forces as enumerated above. The Contractor shall furnish a copy of a Certificate of Insurance, **naming Chesterfield County and Chesterfield County School Board as additionally insured.** Should any of the policies be cancelled before the expiration date, the issuing company will mail 30 days written notice to the certificate holder. The Contractor shall furnish insurance in satisfactory limits, and on forms and of companies which are acceptable to the County's Attorney and/or Risk Management and shall require and show evidence of insurance coverages on behalf of any subcontractors (if applicable), before entering into any agreement to sublet any part of the work to be done under this Contract.

The following insurance requirements are the minimum that will be acceptable:

1. Worker's Compensation Insurance with statutory limits and Employers' Liability Insurance of \$500,000 for one accident or aggregate disease.
2. Commercial General Liability - \$1,000,000 Each Occurrence Combined Single Limit - Including coverage for XC and U hazards
3. Comprehensive Automobile Liability - \$1,000,000 Each Occurrence Combined Single Limit
4. Umbrella Liability Insurance - \$2,000,000 Each Occurrence

All insurance policies under coverages 2 and 4 above shall name the County, as additional insured.

The Contractor shall be responsible for maintaining current certificates of insurance on file with the County, and the Insurance Company shall be responsible for notifying the County thirty (30) days prior to the expiration, cancellation, non-renewal, or material change in the coverage.

The Contractor shall be responsible for continuing in force completed operations, bodily injury and property damage coverage for a minimum of two (2) years after completion and acceptance of the work.

For projects with a construction cost of less than \$50,000, Builder's Risk coverage for the full project value shall be paid for and provided by the Contractor and be subject to approval by the Office of Risk Management. This coverage shall be provided by a company with an A.M. Best rating of no less than B+. The County shall be named as an additional insured.

For projects with a construction cost of more than \$50,000, the Builder's Risk coverage will be provided by the County, however, the Contractor shall be responsible for the first \$10,000 of any claim. The County's Builder's Risk coverage is \$50,000 self insured retention.

PLEASE FORWARD A COPY OF THESE INSTRUCTIONS TO YOUR INSURANCE CARRIER.

INSTRUCTIONS REGARDING INSURANCE CERTIFICATES

The Contractor and his insurance company should carefully review the insurance requirements applicable to this job. All requirements must be met before the County will execute the contract. In particular, we would call your attention to the following:

1. Please note that the Insurance Certificate must state that the Commercial General Liability and the Umbrella Liability Insurance Policies name **Chesterfield County and Chesterfield County School Board** as additional insured. This requirement may be met by placing the following language on the Certificate. Many Certificates have a space headed "**Description**" where the language may be inserted as follows:

Chesterfield County and Chesterfield County School Board is additional insured or that Chesterfield County and Chesterfield County School Board is additional insured with respects to General Liability; and/or Umbrella Liability policies.

2. The Insurance Certificate must also contain the required statement concerning notice of cancellation or other change in coverage. The statement used on some Certificate forms is not acceptable. The statement which is required by the contract documents reads as follows:

"Such certificate shall provide that in the event of the cancellation of the policy or policies listed on such certificate, not less than 30 days notice in writing shall be given to the County."

NOTE: This requirement may be achieved through modifications to the cancellation clause by striking the words 'endeavor to' in the second line and by striking the clause reading 'but failure to mail such notice shall impose no obligation or liability of any kind upon the insurer, its agents or representatives.' OR In lieu of modifying the cancellation clause, Chesterfield County may be listed an additional insured as an endorsement to the policy or by endorsement to the policy the insurer will provide 30 day cancellation notice to Chesterfield County.

3. The Certificate Holder should be listed as:

Chesterfield County
c/o Purchasing Department
P. O. Box 51
Chesterfield, VA 23832-0001
IFB/RFP #

4. Certificate of Insurance must be signed.

SUPPLEMENTARY GENERAL CONDITIONS

1. QUALIFICATIONS OF BIDDERS

The County may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the County that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

2. SUBMITTALS

If requested, the Bidder shall submit the following information to the County within seven days of notification of selection for the award of a Contract for the Work:

- a. a designation of the Work to be performed by the Bidder with his own forces;
- b. the proprietary names and the suppliers of principal items or systems of materials and equipment proposed for the work;
- c. a list of names of the Subcontractors or other persons or entities proposed for the principal portions of the Work.

Prior to the award of the Contract, the County will notify the Bidder in writing if the County, after due investigation, has reasonable objection to any such proposed person or entity. If the County has reasonable objection to any such proposed person or entity, the Bidder may submit an acceptable substitute person or entity.

The County may, at his discretion, accept the substitution, or he may disqualify the Bidder. In the event of disqualification under this Sub-paragraph, bid security will not be forfeited.

Persons and entities proposed by the Bidder and to whom the County has made no reasonable objection under the provisions of Sub-paragraph (c) must be used on the Work for which they were proposed and shall not be changed except with the written consent of the County.

3. PRE-CONSTRUCTION CONFERENCE

A pre-construction conference to include representatives of the County, the Engineer (if applicable), and the Contractor shall be mandatory prior to start of construction unless waived by the County. Pre-construction conference shall be scheduled at least three (3) days prior to start of construction.

4. SUPERVISION AND CONSTRUCTION PROCEDURES

The Contractor shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract.

The Contractor shall be responsible to the County for the acts and omissions of his employees, Subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the Contractor.

5. USE OF PREMISES AND REMOVAL OF DEBRIS

The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. The Contractor shall maintain all access roads and walks clear of debris, materials and equipment during the course of the Work. All streets, drives, walks, fences, trees, poles, antennae and the like where disturbed, removed or damaged shall be replaced, returned or repaired such that the facility and its appurtenances are left in as good condition after completion of the work as it was before operations began.

Debris shall be disposed of by the end of "every" working day and not stockpiled. Beverage cans, bottles, lunch refuse, cigarette debris, etc. will not be tolerated on the job site except by immediate and proper removal of the same on a daily basis. At the completion of the Work, the Contractor shall remove all his waste materials and rubbish from and about the Project as well as all tools, construction equipment, machinery and surplus materials.

6. MATERIALS AND WORKMANSHIP

The Contract Documents describe the character and features of the materials and workmanship required to perform the Work. The Contract Documents require first class work and materials in all particulars. It is understood that the contract includes any and all work that may be necessary to connect the work done with the adjoining work in a proper and workmanlike manner.

The County reserves the right to employ an independent testing laboratory to conduct tests of materials, etc. as the County may deem necessary to assure complete compliance with the requirements of the specifications. The Contractor shall offer full cooperation with personnel in the employ of the County in making these tests.

7. NO DEVIATION FROM CONTRACT DOCUMENTS BY THE CONTRACTOR

In performing the Work, the Contractor shall not deviate from the Contract Documents without the written consent of the County. If the Contractor does deviate from the Contract, he shall correct the error at his expense in a manner satisfactory to the County.

8. INTERPRETATION OF CONTRACT DOCUMENTS

In case of discrepancy between or among Contract Documents, the County shall make such interpretations as may be deemed necessary for the fulfillment of the intent of the Contract Documents as construed by him and his decision shall be final.

The Contractor shall verify all figures on the Plans and will be responsible for the proper coordination of all dimensions as well as the different parts of the Work.

9. OTHER PLANS AND WORKING DRAWINGS (SHOP DRAWINGS)

Such information as is necessary to give a comprehensive idea of the construction contemplated, are shown on the Plans. Contractor shall submit to the County for his approval such additional detailed shop or working drawings as may be required for the construction of

any part of the work. Pending the approval of such drawings, any work done or materials ordered shall be at the risk of the Contractor.

10. DISCREPANCIES

The Contractor shall immediately report to the County, in writing, any discrepancies found between the Contract Documents and site conditions or any inconsistencies or ambiguities in the Contract Documents. The County shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk.

11. FINAL INSPECTION

At time of final inspection, the Contractor, if requested, shall provide a knowledgeable representative to assist in the inspection of the completed installation for conformance with specifications. The County or Engineer shall prepare a Punch List. Any deficiencies shall be promptly and permanently corrected prior to final acceptance of the work, and shall be the full responsibility of the Contractor.

12. PAYMENT

If the Contractor performs, properly, all of the obligations of the Contract Documents, the County shall pay the Contractor for the performance of the Work in the manner and within the time specified in the Contract Documents.

13. MONTHLY ESTIMATES AND RETAINAGE

On the 20th day of each month, or at any other regular time agreed upon by the County and Contractor, the Contractor shall prepare and submit to the County a monthly estimate for Partial Payment. The monthly estimate shall cover items of work for which the Contractor is entitled to be paid since the last previous monthly estimate was submitted, including (1) the value of the Work done, (2) major items of equipment or materials delivered to the site of the project to be installed by the Contractor, as substantiated by submitted invoices and as approved by the inspector, and (3) materials incorporated into the Work.

The County shall pay to the Contractor all sums due under the monthly estimate less five percent (5%) retainage on or before the 15th day of the month following the submission of the monthly estimate, unless the County asserts a right to withhold some or all of the payment under the provisions of the Contract Documents.

The Contractor will be paid for materials delivered to and stored on the job site. Payment will be for actual cost of materials as evidenced by receipted invoices, less five percent (5%) retainage. The contractor shall make a separate accounting of these materials and shall submit an accounting of them, with four (4) copies, along with the monthly estimate for partial payment.

14. PARTIAL PAYMENT NO WAIVER OF RIGHTS

Partial payments made under this Contract by the County are not evidence of the proper performance by the Contractor either in whole or in part, and no payment made by the County shall be construed to be an acceptance of defective or improper work. No act of the County or the Engineer or the representative of either of them in superintending or directing the Work, no

failure to disapprove or reject any material used in the Work, and no extension of time for the completion of the Work shall be construed as acceptance of the Work either in whole or in part. Acceptance of the work by the County shall occur only upon Final Payment by the County.

15. TERMINATION FOR BREACH OR NON-PERFORMANCE

If the Contractor fails to perform the Work promptly and diligently, or if the Contractor breaches the Contract in any other way, the County may:

- a. after providing the contractor with fifteen (15) days written notice, supply any workmen, equipment or materials necessary to ensure that the Work is performed promptly and diligently. The County may deduct the cost of supplying additional workmen, equipment or materials from payments due to the Contractor;
- b. terminate the Contract, enter upon the premises, take possession of all equipment, materials or appurtenances, and employ any person or persons to finish the Work.

In case of termination of the Contract by the County pursuant to this paragraph, the Contractor shall not be entitled to receive any further payment from the County until Completion of the Work has occurred. After completion of the Work, the County shall pay to the Contractor the amount of the unpaid balance due to the contractor at the time the Contract was terminated minus the cost incurred by the County to complete the Work. If the cost incurred by the County to complete the Work exceeds the unpaid balance due to the Contractor, the contractor shall be due no money from the County and, instead, the Contractor shall pay to the County the difference between the unpaid balance due and the County's cost to complete the Work.

16. WAIVER OF ONE BREACH NOT WAIVER OF OTHERS

No waiver by the County or its agents or employees of any breach of this Contract by the Contractor shall be construed as a waiver of any other or subsequent breach of the Contract by the Contractor. All remedies provided by this Contract are cumulative, and in addition to each and every other remedy under the law.

17. CHANGE ORDERS:

Change Orders must be approved by the County prior to work being performed.

18. SUBSTITUTIONS

The Contractor shall be responsible for making all changes in the work necessary to adapt and accommodate any equivalent or substitute products, which are submitted and accepted in lieu of the products whose name and model numbers are specified and around which the drawings were developed. The necessary changes shall be made at the Contractor's expense. The Contractor shall submit sufficient data concerning the substitute equivalent products and resulting necessary changes to the project to the County documenting that the substitute product(s) can be properly integrated with the project.

BASIS OF AWARD

The award shall be made to the lowest responsive and responsible bidder on a Grand Total Bid for Bid I and Bid II.

OR

The award shall be made to the lowest responsive and responsible bidders based on Bid I Total and Bid II Total.

PRICING SCHEDULE

Furnish all labor, equipment and materials necessary for Renovations to Existing Home Team Bleachers at Midlothian Middle School and Manchester Middle School, Paving an Existing Gravel Path and Construction of Handicap Parking Spaces at Manchester for the Chesterfield County Parks Department.

BID I

Manchester Middle School Total: \$ _____

BID II

Midlothian Middle School Total: \$ _____

GRAND TOTAL BID FOR I & II \$ _____

TIME OF PERFORMANCE

Bidders are required to state the time of proposed project completion. Unless otherwise specified, bid the earliest completion possible. Bidders must insert a definitive time frame IN CALENDAR DAYS, within which completion will be made after receipt of Notice to Proceed. Indefinite terms such as “promptly”, “as soon as possible”, etc., will not be given consideration. **THE FAILURE OF A BIDDER TO PROVIDE A DEFINITE COMPLETION TIME WILL RESULT IN THE DISQUALIFICATION OF THE BID IN ITS ENTIRETY.**

Completion in Calendar Days as listed below:

- 1. _____ (Manchester Middle School)
- 2. _____ (Midlothian Middle School)

ADDENDUM INFORMATION (if applicable)

Receipt of the addendum listed below is acknowledged and the bids incorporate all requirements of this addendum:

_____	Dated _____
_____	Dated _____
_____	Dated _____

Accompanying this Bid is a Bid Bond/Certified/Cashier's Check in the amount of _____ payable to Treasurer, Chesterfield County, Virginia, which is to be forfeited to the extent necessary to make up the difference between the Bid and the second low bid, if the undersigned shall fail to execute the Contract and furnish satisfactory Performance and Labor and Material Payment Bonds under the conditions and within the time specified. If the Bid Bond or guarantee is not sufficient to make up the difference between the Bid and second low bid, together with any consequential damages, the undersigned Bidder agrees to pay the Owner any losses in excess of the bond or guarantee.

The undersigned Bidder agrees to begin the work after the date specified in the Notice to Proceed and to prosecute the work in such manner as to complete it within the time limit as set forth above.

If the bid from the lowest responsible bidder exceeds available funds, the County may negotiate with the low bidder to obtain a contract price within available funds.

CONTRACTOR REGISTRATION

If a contract for construction, removal, repair or improvement of a building or other real property is for Seventy Thousand Dollars (\$70,000) or more, or if the total value of all such contracts undertaken by a Bidder within any twelve-month period is Five Hundred Thousand Dollars (\$500,000) or more, the Bidder is required under Title 54.1, Code of Virginia (1950), as amended, to be licensed by the State Board of Contractors as a "CLASS A CONTRACTOR". If such a contract is for Seventy-five Hundred Dollars (\$7,500) or more (One Thousand Dollars [\$1,000] for electrical, plumbing and HVAC work) but less than Seventy Thousand Dollars (\$70,000), the Bidder is required to be licensed as a "CLASS B CONTRACTOR". If such a contract is for One Thousand Dollars (\$1,000) or more but less than Seventy-five Hundred Dollars (\$7,500) and is not for electrical, plumbing and HVAC work, the Bidder is required to be licensed as a "CLASS C CONTRACTOR". The Contractor license shall have the appropriate specialty classification that is predominant for the respective work. The Bidder shall indicate in the space provided whichever of the following notations is appropriate, inserting his contractor license number and specialty.

Licensed Class A Virginia Contractor No. _____

Licensed Class B Virginia Contractor No. _____

Licensed Class C Virginia Contractor No. _____

Specialty: _____

If the Bidder shall fail to provide this information on his bid or on the envelope containing the bid and shall fail to promptly provide said Contractor license number to the County in writing when requested to do so before or after the opening of Bids, he shall be deemed to be in violation of Section 54.1-1115 of the Code of Virginia (1950), as amended, and his bid will not be considered.

If a Bidder shall fail to obtain the required license prior to submission of his bid, the bid shall not be considered.

TERMS AND SIGNATURE SHEET

All bids shall be signed on the Terms and Signature Sheet in order to be considered.

If discounts for prompt payment are offered by the bidder, it is required that a minimum of twenty (20) days be allowed for payment. Discounts for prompt payment will not be considered in the evaluation of bids. Discounts for prompt payment will be shown on the purchase order/contract and taken if invoices are processed and payment made within the stipulated time frame. If discounts are not offered, payment shall be made thirty (30) days after receipt of an accurate invoice by the County. Our terms are _____

All prices shall be F.O.B.: Locations Within IFB. Freight, delivery costs, and incidental charges shall be included in the bid price(s).

In compliance with this Invitation for Bid #06-3910-9354 and subject to all conditions thereof, the undersigned offers and agrees to furnish any or all items and/or services upon which prices are quoted, at the price quoted as specified.

My signature below certifies:

- I agree to abide by all conditions of this Bid and that I am authorized to sign this Bid.
- the accompanying bid is not the result of or affected by, any act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under, Chapter 12, Title 18.2, 498.4 of the *Code of Virginia*, 1950, as amended. Furthermore, I understand that fraudulent and collusive bidding is a crime under the Virginia Governmental Frauds Act, the Virginia Government Bid Rigging Act, the Virginia Anti-Trust Act, and Federal Law and can result in fines, prison sentences, and civil damage awards.
- the accompanying bid is in compliance with the *State and Local Government Conflict of Interests Act* 2.2-3100, supplemented by Article 6, 2.2-4367-69 of the *Code of Virginia*. Specifically, no county employee, county employee's partner, or any member of the county employee's immediate family holds a position with the bidder, offeror, or contractor such as an officer, director, trustee, partner or the like, or is employed in a capacity involving personal and substantial participation in the procurement transaction, or owns or controls an interest of more than five per cent.

Complete Legal Name of Firm: _____

Order From Address: _____

Remit To Address: _____

Signature: _____

Name (type/print): _____ **Title:** _____

Fed ID No.: _____ **Phone ()** _____ **Fax ()** _____

We hereby provide the following information to Chesterfield County regarding our business. We understand that it is provided for statistical purposes only and all firms submitting bids will receive equal consideration.

Minority Business Enterprise:	Yes _____	No _____
Woman-Owned Business:	Yes _____	No _____
Chesterfield Business:	Yes _____	No _____

CONTRACTOR DATA SHEET
TO BE COMPLETED AND SUBMITTED WITH BID

QUALIFICATIONS OF BIDDER: Bidders shall have the capability and capacity in all respects to fulfill the contractual requirements to the satisfaction of the County.

Indicate the length of time you have been in business as a company providing the type of commodity and service required for this contract.

_____ years _____ months

Provide a minimum of three (3) references that can substantiate past work performance and experience in the type of work required for this contract.

Contractor Name, Address, Phone Number and Contact Person

1.
2.
3.

TABLE OF CONTENTS

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01100 – SUMMARY
SECTION 01141 – CONSTRUCTION ACTIVITIES IN A PUBLIC PARK/SCHOOL
SECTION 01290 – PAYMENT PROCEDURES
SECTION 01310 – PROJECT MANAGEMENT AND COORDINATION
SECTION 01330 – SUBMITTAL PROCEDURES
SECTION 01353 – CONTRACTOR ENVIRONMENTAL GUIDELINES
SECTION 01700 – EXECUTION REQUIREMENTS
SECTION 01770 – CLOSEOUT PROCEDURES

DIVISION 02 – SITEWORK

SECTION 02741 – HOT-MIX ASPHALT PAVING
SECTION 02751 – CEMENT CONCRETE PAVEMENT
SECTION 02920 – LAWNS AND GRASSES

SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Type of the Contract.
 - 2. Specification formats and conventions.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Owner: Chesterfield County Department of Parks and Recreation
 - 1. Owner's Representative: Stuart W. Connock, Jr
P.O. Box 40
Chesterfield, VA 23832
- B. The Work consists of the following:
 - 1. The Work includes renovation to the existing home team bleachers at Midlothian M.S. and Manchester M.S., paving an existing gravel path at Manchester M.S., and construction of handicap parking spaces at Manchester M.S.

1.4 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.
 - 1. Section Identification: Use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Specifications are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the Table of Contents at the beginning of the Specifications to determine numbers and names of Sections in the Contract Documents.
 - 2. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.

- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
- C. Document Conflicts: The Drawings, Specifications, and Local, State, Federal and other specified regulatory requirements form the complete Construction Documents package that will be used for construction.
1. In the event of a conflict between any of the requirements, the most stringent requirement shall apply.
 2. In the event of a conflict between any information presented, the following Order of Precedence shall apply.
 - a. Drawings
 - b. Specifications
 3. In the event of a conflict of any information presented within either the Drawings or the Specifications, the Engineer shall be notified immediately.
 4. If a specific product is identified but the product does not meet the minimum ASTM requirements noted, the engineer shall be notified immediately.
 5. The contractor shall record all instances of document conflicts and the manner in which they were resolved. The list shall be provided with the Project Record Documents to the Engineer at the end of the project.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01100

SECTION 01141 - CONSTRUCTION ACTIVITIES IN A PUBLIC PARK/SCHOOL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

- A. This Section includes requirements for temporary safety measures, traffic control measures, management of construction equipment after normal working hours, and daily scheduling of new construction.
- B. Temporary Safety Measures include, but are not limited to, the following:
 - 1. Temporary chain link fencing
 - 2. Plastic Safety Fence
 - 3. Barricade Tape
 - 4. Wooden Barricade
 - 5. Safety Personnel
- C. Traffic Control Measures include, but are not limited to, the following:
 - 1. Traffic Signs
 - 2. Traffic Cones
 - 3. Barricades
- D. Management of Construction Equipment and protection of work in place, after Normal Working Hours include, but is not limited to, the following:
 - 1. Padlocks
 - 2. Chains
 - 3. Security personnel

1.3 SUBMITTALS

- A. Company safety policy and procedures: At the pre-construction meeting, submit a copy of the company's "Safety Policy and Procedures Manual". Each employee must be required to read, understand and follow the procedures listed in the manual in order for the manual to be considered valid.

- B. Park Safety Management Documentation: Prior to starting construction, submit a copy of the procedures that will be used to ensure safe construction practices within the park setting specific to the scope of work. At a minimum, the document shall include the following:
1. A list of the equipment for the Temporary Safety Measures that will be used and where they will be used.
 2. A list of the Traffic Control Measures that will be used and where they will be used.
 3. Locations for storing the construction equipment after hours and stockpiling materials.
 4. A map showing how each phase or area of the construction will be segregated from the public. Multiple maps may be required depending on the complexity of the phasing.
 5. A general schedule for each phase or area of construction. The schedule is different from the schedule for the owner as it will show the order of each phase and area of construction and approximate dates. This document will be reviewed for coordination with the park schedule for upcoming events.

1.4 PROJECT CONDITIONS

- A. Upon starting construction, the contractor understands that the park remains open after normal working hours and on weekends and holidays. The contractor also understands that the construction equipment and construction site may be subject to intrusion, vandalism, and theft from minors using the park since the construction equipment and site will be left unsupervised.
1. The contractor will be responsible for repairing and replacing equipment at no cost to the owner.
 2. Neither the owner, park operator, nor the engineer will be liable for any damage caused by park patrons.
 3. If equipment is vandalized or stolen, the contractor shall contact the appropriate authorities to report the damage. The contractor may pursue, at no cost to the owner, compensation for the damages from the responsible party.
 4. If the new construction is vandalized, the contractor shall provide the repairs at no cost to the owner.
- B. The contractor shall provide Temporary Safety Measures around the areas of construction to minimize the possibility of damage to the new construction, construction equipment, and injury to park patrons.
1. If an injury to a park patron occurs as a result of the construction, either during or after normal working hours, the contractor shall be held liable.
 2. If damage to a park patron's belonging(s) occur(s) as a result of the construction, either during or after normal working hours, the contractor shall be held liable.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide concrete bases for supporting posts. Provide a lockable gate for the fence that will safely allow the passage of construction vehicles.
- B. Plastic Safety Fence: International orange plastic safety fence with a tensile yield of 2000 lbs per 4 foot width per ASTM 638, a ultimate tensile strength of 2900 lbs per 4 foot width per ASTM 638, elongation at break greater than 1000% per ASTM 638, and chemically inert to most chemicals. The fence shall be at least 60 inches high and securely fastened to metal post imbedded 24" into the ground located at each turn and a maximum of 10 feet apart.
- C. Barricade Tape: 3 inch wide 0.11 inch thick yellow polyethylene tape with the words "CAUTION" uniformly printed throughout the tape length in 2 inch high black letters. The tape shall be smooth, uniform and free of defects and irregularities. The tape shall have a tensile strength at breaking of 4000 psi with an elongation at breaking at least 400%. The tape shall be installed 36" above the ground on wooden stakes located at each turn and a maximum of 5 feet apart.
- D. Wooden Barricade: 2 inch by 10 inch by 8 feet long wood beam painted orange with black 2 inch wide striping supported 36 inches above the ground on a base can be moved by hand. On the wood beam, a "CAUTION" or "DANGER" sign shall be securely fastened in the middle of the beam.
- E. Security Personnel: An employee of the contractor, paid as part of the construction contract, who shall remain after the construction crew leaves the area of concern and stays until the park closes. The employee shall be responsible for directing park patrons away from the construction area and equipment. Multiple security personnel may be deemed necessary and shall be provided by the contractor at no additional cost to the owner.
- F. Traffic Signs: Traffic signs shall comply with "The Manual on Uniform Traffic Control Devices" latest edition.
- G. Traffic Cones: Traffic cones shall be bright orange plastic cones at least 30 inches high and shall sufficiently flexible to not cause damage to vehicles if the cones are impacted or run over, but resilient enough to return to the original shape and remain vertical.

PART 3 – EXECUTION

3.1 CONSTRUCTION PRACTICES, GENERAL

- A. Locate Temporary Safety Measures to limit park patron access to the new construction and construction equipment.
- B. Locate Traffic Control Measures such that traffic movement throughout the park is not disturbed and so the new traffic patterns are easy to understand.
- C. At the end of each working day:
 - 1. Clean up the site removing any tools that may be lifted unaided by mechanical equipment.
 - 2. Locate the construction equipment in the area designated during the Pre-Construction meeting, lock all doors and remove any keys. Using chains and padlocks, or other locking devices, secure the steering wheels for each piece of equipment such that if the equipment is started, mobility will be limited.
 - 3. Ensure the temporary safety measures are complete before leaving the site limiting access to the new construction and excavations.

3.2 TEMPORARY MEASURES FOR OVERALL CONSTRUCTION SITE

- A. Temporary Chain Link Fencing: Locate the fence around the limits of construction for the current phase of construction providing sufficient room for working in a safe environment meeting all OSHA requirements while minimizing interference with the park operations outside of the new construction. Contact Chesterfield County Department of Parks and Recreation prior to erecting the fence to verify the location will be acceptable. If the construction area cannot be isolated, isolate the unsafe areas per the direction of Chesterfield County.
- B. Traffic Control Signs: Locate the signs up-road in all directions describing the possible dangers and traffic restrictions so a park patron may enter the construction area aware, if passage through the construction area is necessary, or avoid the construction area as necessary.
- C. Traffic Cones: Locate around and throughout the site as necessary to direct traffic away from unsafe areas. If roads need to be blocked off, locate the cones so a vehicle is diverted into a parking lot or another road without having to backup or turn-a-round at the cones.
- D. Wooden Barricades: Locate around and throughout the site as necessary to direct traffic away from unsafe areas. If roads need to be blocked off, locate the cones so a vehicle is diverted into a parking lot or another road without having to backup or turn-a-round at the cones.

- E. Security Personnel: Station near the construction area and/or the equipment so the person(s) may notice someone approaching too close for safety or security reasons.

3.3 TEMPORARY FACILITIES

- A. Temporary Restroom: The Contractor shall provide at no cost to the Owner temporary restroom facilities using a port-a-john or other temporary restroom approved by the Owner and allowed per local and state regulations.
 - 1. The acceptable locations will be determined at the pre-construction meeting.
 - 2. All construction personnel shall use the temporary restroom. Permanent restrooms located throughout the park will be off limits to construction personnel.
 - 3. Any permits required shall be the responsibility of the Contractor and shall be obtained at no cost to the Owner.
 - 4. The restroom shall be maintained in a clean and presentable manner. If requested by the Owner, the Contractor shall have the temporary facility cleaned, emptied or replaced immediately at no cost to the Owner.

3.4 OPEN EXCAVATIONS

- A. Isolated Excavations: Applies when the construction area cannot be surrounded by Temporary Chain Link Fence.
 - 1. For excavations less than 12 inches deep, surround the excavation with barricade tape before leaving the site.
 - 2. For excavations less than 24 inches deep but greater than or equal to 12 inches deep, surround the excavation with plastic safety fence before leaving the site.
 - 3. For excavations 24 inches deep or greater, surround with temporary chain link fence before leaving the site.
- B. Large Excavated Areas: Applies when the construction area cannot be surrounded by Temporary Chain Link Fence.
 - 1. Surround entire excavated area with temporary chain link fence before leaving the site.

3.5 ASPHALT

- A. Schedule placing asphalt so it may be sufficiently cool before the end of the working day.

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- B. Locate traffic cones or barricades at each access to the asphalt until it has hardened sufficiently to apply the striping.

3.6 PORTLAND CEMENT CONCRETE

- A. Schedule placing concrete to the early morning so it may become sufficiently hard, resistant to imprinting, before the end of the working day.
- B. Surround all fresh concrete pours with plastic safety fence for at least two days after placing the concrete to restrict pedestrian access on the new concrete.
- C. Locate traffic cones around concrete with nearby vehicle access for at least seven days after placing the concrete to restrict vehicular access on the new concrete.
- D. Starting at the end of the work day, station security personnel near the concrete until it has sufficiently hardened.

3.7 UTILITIES

- A. Do not leave utility trenches open at the end of the day. Schedule the installation so the portion of utility installed may be covered as required per the Contract Documents. The portion of the trench at the end of the utility line installed may remain open and shall be treated as an isolated excavation.
- B. Restrict access into stockpiled pipe greater than 8 inches in diameter using either plastic safety fence or temporary chain link fence. If plastic safety fence is used, secure the fence to the pipe or completely wrap the stockpile so the fence can be fastened to itself.
- C. Wrap all valves, hydrants, and other waterline appurtenances above grade or stockpiled on site with cloth or a tarp at the end of the working day.

3.8 WEEKENDS AND HOLIDAYS

- A. Secure all vehicles, construction equipment, stockpiles, and other items relating to the construction using temporary chain link fences, plastic safety fences, chains and locks. Remove all keys, including safety keys, from vehicles and equipment.
- B. Install the temporary chain link fence around the construction area and excavations ensuring the gates are adequately locked. Provide Chesterfield County Department of Parks and Recreation with a key, or combination, to the lock.

- C. Place signs and traffic cones near the construction area re-directing the traffic as necessary.

END OF SECTION 01141

SECTION 01290 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals Schedule.
 - 2. Submit the Schedule of Values to Engineer at earliest possible date but no later than seven days after the pre-construction meeting.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.

- b. Name of Engineer.
 - c. Engineer's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Unit price.
 - d. Dollar value of completed work for both the pay request month and for the total duration for each line item.
 - e. Percent of completed work for the total duration for each line item.
 - f. Dollar value of work to remain for each line item.
 - g. Total dollar value of work completed.
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.
 6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 7. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Use information indicated in the Contract Documents to determine quantities.
 8. Change Orders: Provide separate line items for each Change Order. Each Change Order shall be listed separately.
 9. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the
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Schedule of Values or distributed as general overhead expense, at Contractor's option.

10. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is the 25th day of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends five days before the date for each progress payment.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Construction Schedule: With each application for payment, the Contractor shall submit a Revised Construction Schedule. If the construction is behind schedule, the Contractor shall also submit a letter documenting the methods that will be used to get the construction back on schedule. Application for payment will be automatically rejected if the Construction Schedule, and if necessary, the letter explaining the method to get the project back on schedule, is not included.
- F. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 24 hours.
 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

- G. Waivers of Mechanic's Lien: With the last Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of Values.
 - 3. Contractor's Construction Schedule (preliminary if not final).
 - 4. Products list.
 - 5. Schedule of unit prices.
 - 6. Submittals Schedule (preliminary if not final).
 - 7. List of Contractor's principal consultants.
 - 8. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 9. Certificates of insurance and insurance policies.
 - 10. Performance and payment bonds.
 - 11. Data needed to acquire Owner's insurance.
 - 12. Approval of shop drawing submittals for items identified as complete.
- I. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
 - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - 2. A retainer of 5% shall be applied.
- J. Final Payment Application: The final application for payment cannot be executed until all Change Orders have been executed. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
 - 1. AIA Document G706A, "Contractor's Affidavit of Release of Liens.

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PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01290

SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General project coordination procedures.
 - 2. Administrative and supervisory personnel.
 - 3. Project meetings.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Closeout Procedures" for coordinating Contract closeout.

1.3 PROJECT MEETINGS

- A. General: The Engineer will conduct meetings and conferences at Project site.
 - 1. Attendees: The General Contractor and any Sub-Contractor, whose presence is required, shall attend.
 - 2. Minutes: A Site Visit Report and Meeting Minutes shall be prepared by the Engineer and distributed to the General Contractor within five days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than five days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 - 1. Attendees: Authorized representatives of Owner, Engineer, and Contractor shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect progress, including the following:

- a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing.
 - d. Designation of responsible personnel.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for processing Applications for Payment.
 - g. Distribution of the Contract Documents.
 - h. Submittal procedures.
 - i. Preparation of Record Documents.
 - j. Use of the premises.
 - k. Responsibility for temporary facilities and controls.
 - l. Parking availability.
 - m. Office, work, and storage areas.
 - n. Equipment deliveries and priorities.
 - o. Progress cleaning.
 - p. Working hours.
- C. Progress Meetings: Progress meetings will be conducted at bi-weekly intervals. Coordinate dates of meetings with preparation of payment requests.
- 1. Attendees: In addition to representatives of Owner and Engineer, the General Contractor, each Sub-Contractor, shall be present at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

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PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01310

SECTION 01330 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- B. Related Sections include the following:
 - 1. Division 1 Section "Payment Procedures" for submitting Applications for Payment.
 - 2. Division 1 Section "Project Management and Coordination" for submitting Coordination Drawings.
 - 3. Division 1 Section "Closeout Procedures" for submitting warranties and documents.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Engineer's responsive action.
- B. Informational Submittals: Written information that does not require Engineer's approval. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

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- a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - b. If a substitution is made, the contractor is responsible for coordinating the substituted item with all other submittals, including submittals already approved. Approved submittals may require re-submission depending on the severity of the change.
 - B. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal.
 - 1. Initial Review: Allow ten days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Allow ten days for processing each resubmittal.
 - 4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
 - C. Identification: Place a permanent label or title block on each submittal for identification.
 - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 - 2. Provide a space approximately 2 by 3 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
 - 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Contractor.
 - d. Name and address of subcontractor.
 - e. Name and address of supplier.
 - f. Name of manufacturer.
 - g. Unique identifier, including revision number.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
 - j. Other necessary identification.
 - D. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
 - E. Additional Copies: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
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- F. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will discard submittals received from sources other than Contractor.
1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
 2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
 3. Transmittal Form: Provide locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Submittal and transmittal distribution record.
 - i. Remarks.
 - j. Signature of transmitter.
- G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- H. Use for Construction: Use only final submittals with mark indicating action taken by Engineer in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
1. Number of Copies: Submit six copies of each submittal, unless otherwise indicated. Engineer will return four copies. Mark up and retain one returned copy as a Project Record Document.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale or if catalog cuts are used, identify the selection used for the specific project. Do not base

Shop Drawings on reproductions of the Contract Documents or submit multiple options for one item.

1. Preparation: Include the following information, as applicable:

- a. Dimensions.
- b. Identification of products.
- c. Design calculations certified by a licensed professional; if custom precast structures are used.
- d. Compliance with specified standards.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.

3. Number of Copies: Submit six blue- or black-line prints of each submittal. Engineer will retain one print. Two will be sent to the Owner and the remainder will be returned. Mark up and retain one returned print as a Project Record Drawing.

C. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for Construction Manager's action.

D. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."

E. Application for Payment: Comply with requirements in Division 1 Section "Payment Procedures."

F. Schedule of Values: Comply with requirements in Division 1 Section "Payment Procedures."

G. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

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1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Engineer will not return copies.
 2. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."
- B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of Engineers and owners, and other information specified.
- C. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- D. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- E. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. No exceptions taken.
 2. Make corrections noted (Resubmission not required).
 3. Amend and resubmit.
- C. Informational Submittals: Engineer will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.
- E. If after two re-submittals, corrections are still required, the Contractor shall be responsible for the additional fees necessary for subsequent revisions. The additional fee will be based on the Engineer's hourly rate established in the Engineer's Contract with the Owner.

END OF SECTION 01330

SECTION 01353 – CONTRACTOR ENVIRONMENTAL GUIDELINES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements with relevant environmental policies and procedures for the following:
 - 1. General Environmental Management Procedures.
 - 2. Waste Disposal.
 - 3. Equipment Decommissioning.
 - 4. Water Discharges.
 - 5. Material Storage/Spills.
 - 6. Stormwater Management.
 - 7. PCBs.
 - 8. Asbestos.
 - 9. Lead.
 - 10. CFCs.
 - 11. Environmental Activity Review.

1.3 COMPLAINTS

- A. Chesterfield County operates an EMS that meets the requirements of the ISO 14001 standard. Conformance with the environmental policy and all requirements noted in this document is expected of all contractors, sub-contractors, suppliers and their employees while working on-site. Failure to follow these requirements can be grounds for termination of the on-site contract work.

1.4 CONTACT INFORMATION

- A. For further information, contact the Chesterfield County, Virginia Office of Environmental Management at (804) 717-6531.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 GENERAL ENVIRONMENTAL MANAGEMENT PROCEDURES

- A. Contractors shall not transport hazardous chemicals on-site without having prior knowledge of the associated Material Safety Data Sheets (MSDS). These materials include but are not limited to sealers, adhesives, paints, coatings, fuels, oils, acids and caustics. All sizes of containers require review and approval before their use on site.
- B. Contractors shall provide adequate control of fugitive dust emissions during all operations and activities.
- C. Contractors shall not discharge anything to drains and/or sewers without the prior approval of the Chesterfield County WWTP Plant Manager of designee.
- D. Contractors shall provide adequate spill/release prevention for all bulk materials.
- E. Contractors shall immediately notify the Chesterfield County Project Manager of any reportable spills, releases or other environmental incidents. Contractors will follow up by submitting a completed Environmental Tracking of Spills and Release forms.
- F. Contractors shall properly label, store and dispose of all waste materials.
- G. Contractors shall be sensitive to the effects of noise, odor, light and traffic movement to the local community.
- H. All Contractors shall practice good housekeeping. Clean up of trash, etc. generated by the Contractor's activities or the activities of its employees are the Contractor's responsibility.
- I. Contractors are responsible for keeping the site clean and orderly.
- J. Contractors shall not engage in any excavation activities on-site without the prior approval of the Chesterfield Country Project Manager.

3.2 WASTE DISPOSAL

- A. All waste disposal (i.e., construction debris, scrap metal, non-hazardous waste, municipal solid waste, etc.) will be the responsibility of the Contractor, the originator of the waste, unless otherwise pre-approved.

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- B. The Chesterfield County Project Manager shall be informed of all generated hazardous waste streams before a waste is generated and collected on-site.
 - C. The Chesterfield County Project Manager shall be informed of the location of all generated hazardous waste storage areas, maximum quantities and the container type.
 - D. Containers shall be labeled with their contents and the responsible Contractor's name and contact information. NO UNLABELED CONTAINERS ARE PERMITTED ON-SITE.
 - E. Shipping information and paperwork (MSDS, Waste Profiles, Bills of Lading and inventory) must be provided upon request.
 - F. Contractors are contractually responsible for all regulated wastes.

3.3 EQUIPMENT DECOMMISSIONING.

- A. All equipment shall be thoroughly inspected by the Contractor for fluids and other hazardous materials prior to removal.
- B. All fluids and other hazardous materials in the equipment shall be removed prior to decommissioning and disposal of any waste generated will be handled in accordance with 3.2 – Waste Disposal above.

3.4 WATER DISCHARGES

- A. Discharge of materials to ANY sewer system, other than sanitary sewage, is prohibited without the prior consent of the Chesterfield County WWTP Plant Manager.
- B. Discharge of ANY material to outside drains other than stormwater are prohibited under the established guidelines of the CLEAN WATER ACT.
- C. In the event that the WWTP Plant Manager approves discharges to sewers, the wastewater treatment plant must still be notified prior to discharges of any significant volume or any discharges that could affect the operations of the wastewater treatment plant.

3.5 MATERIALS STORAGE/SPILLS

- A. There will be no outside storage of any materials without the consent of the Chesterfield County Project Manager.
- B. Approved outside storage areas for chemical materials shall be equipped with non-earthen secondary containment equal to 150% of the capacity of the largest container by the Contractor.

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- C. The Contractor shall ensure that all material containers owned or managed by the Contractor will be properly labeled in accordance with the OSHA HAZARD COMMUNICATION STANDARD (i.e., contents, primary hazard).
 - D. The Contractor shall have available the material safety data sheets (MSDS) for all chemical products in use at all times that their employees are working on-site. MSDSs will be made available to personnel, medical personnel, environmental personnel or their representatives upon request.
 - E. The Contractor shall ensure that chemical containers are closed except when in use.
 - F. Contractors shall maintain spill kits to contain and clean up small spills generated by their employees or from their materials. Spill kits will be kept on-site and will be easily accessible during an emergency.
 - G. THE CONTRACTOR SHALL IMMEDIATELY REPORT ALL SPILLS OR RELEASES OF MATERIALS OTHER THAN INCIDENTAL SPILLS to the Chesterfield County, Virginia Office of Environmental Management at (804) 717-6531). Contractors shall follow up by submitting a completed Environmental Tracking of Spills and Release forms.

3.6 STORMWATER MANAGEMENT

- A. No process materials or any other sources of water pollutant may be co-mingled with stormwater.
- B. Solids shall be prevented from entering sewer drains. Roadways and outside areas shall be kept clean.
- C. It is the Contractor's responsibility to install stormwater control measures such as silt fences, straw bales, etc. to control the solids entering storm drains from erosion or other processes if necessary.
- D. All dirt piles shall be covered to prevent solids from entering storm drains unless otherwise directed.
- E. Vehicle maintenance may not be performed near storm drains unless provisions have been made to contain any spills of vehicle fluids, including oil, gasoline and antifreeze.
- F. In the event that a stormwater management plan is required (greater than one acre of land is disturbed, the plan shall be submitted to the Chesterfield County Project Manager for approval.

3.7 PCBs

- A. If a material is suspected to have PCB contamination, the Chesterfield County Project Manager shall be notified.
- B. All PCB removals shall be coordinated by the Chesterfield County Project Manager.
- C. Any lighting ballast that does not state that it is a non-CB containing ballast shall be disposed of as PCB containing.

3.8 ASBESTOS

- A. Contractors shall contact the Chesterfield County Project Manager prior to any construction or demolition work that could disturb existing structures or equipment.
- B. All asbestos removal and disposal activities shall be conducted in accordance with procedures approved by the Chesterfield County Project Manager.

3.9 LEAD

- A. Contractors are responsible for testing for the presence of lead-based paints when grinding or welding on building or building structure steel. Testing will be done by an approved lab as directed by the Chesterfield County Project Manager.
- B. All lead removal and disposal activities will be conducted in accordance with procedures approved by the Chesterfield County Project Manager.

3.10 CFCs

- A. Contractors shall provide copies of employee training certificates to the Chesterfield County Project Manager upon request.
- B. Intentional venting of CFCs to the atmosphere is prohibited.

3.11 CONTRACTOR/SUPPLIER ENVIRONMENTAL ACTIVITY REVIEW

- A. The Contractors shall submit a written statement outlining their activities and procedures for minimizing and managing the actual or potential environmental impacts of their operations using the Contractor and Supplier Environmental Activity Statement form provided prior to starting any Contractor activities. The Activity Statement shall include an assessment of the potential risks to the environment, Contractors, employees and other personnel associated with on-site activities and proposed measures for minimizing these risks.

END OF SECTION 01353



CHESTERFIELD COUNTY

ENVIRONMENTAL MANAGEMENT SYSTEM CONTRACTOR ENVIRONMENTAL ACTIVITY STATEMENT

This form must be completed, signed and returned before the contracted work commences.

The following information is to be filled out by the Contractor (Please Print)

Contact Person: _____ Date: _____

Company Name: _____

Activities or Work Description:

Chesterfield County Site: _____

Briefly describe the activities or work to be undertaken by your company at the Chesterfield County site.

Air Emissions:

Will the activities or work you perform produce or cause the release of any air emissions? YES or NO

If YES, list the air emissions and the method for preventing impact to the environment.

Water Discharges:

Will the activities or work you perform produce or cause the release of any wastewater? YES or NO

If YES, how will the wastewater be handled?

Materials:

What materials (chemicals, oils, etc.) and/or equipment will you be handling or bringing on site to perform the contracted work?

Training:

Your employees should be trained on the proper handling of materials and equipment, and the proper response to incidents involving these materials. Describe the training that your employees receive.

Waste Generation:

Will the activities or work you perform result in the generation of any wastes? YES or NO

If YES, list the amounts and the types of wastes expected and the proposed disposal method.

Are any waste generated to be recycled? YES or NO

If YES, list the recyclables, where and how they will be recycled.

Energy:

Will the activities or work consume energy? YES or NO
(electricity, compressed air, natural gas, steam, etc.)

If YES, explain what type of energy will be consumed, and how you will minimize consumption.

Other:

Are there any other ways in which your activities will affect or protect the environment? YES or NO

If YES, please describe below.

Information:

Company Name: _____

Contact: First Name: _____ Last Name: _____ Title: _____

Address: _____ City: _____ State: _____

Phone: _____ Fax: _____ Email: _____

Secondary Contact: _____ Sec. Phone: _____

Environmental Agreement

My company and subcontractors that I may bring to the site will abide by all environmental regulations and policies whenever on the property. My company will train all personnel contracting on the property. Sign-in sheets will be maintained as evidence that environmental training has been conducted and will be made available upon request.

The Chesterfield County Project Manager will communicate applicable changes to the Environmental Management System to my company. Retraining of affected individuals will be conducted, as appropriate.

For questions or additional information contact the Chesterfield County Office of Environmental Management at (804) 717-6531.

Print Name: _____ Title: _____

Signature: _____ Date: _____

Project Manager Review

A review of the above-submitted document has been found to be:

☐ COMPLETE – approved, no further action is needed.

☐ INCOMPLETE – a response must be received by: _____

Project Manager Signature: _____ Date: _____

PROJECT TITLE:		BID/RFP#:		P.O.#:	
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SECTION 01700 – EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. General installation of products.
 - 4. Coordination of Owner-installed products.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
 - 8. Correction of the Work.
- B. Related Sections include the following:
 - 1. Division 1 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
 - 2. Division 1 Section "Submittal Procedures" for submitting surveys.
 - 3. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 SUBMITTALS

- A. Qualification Data: For land surveyor to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Engineers and owners, and other information specified.
- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.

1.4 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in the Commonwealth of Virginia and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than five days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Owner's written permission.

- C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Engineer. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

3.4 FIELD ENGINEERING

- A. Identification: Contract Documents will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

3.7 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction.

END OF SECTION 01700

SECTION 01770 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Project Record Documents.
- B. Related Sections include the following:
 - 1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following.
 - 1. List items below that are incomplete in request.
 - 2. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 3. Advise Owner of pending insurance changeover requirements.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

- A. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 PROJECT RECORD DOCUMENTS

- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.
- B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.
 - 1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
 - e. Provide invert information for storm and sanitary sewer pipes.
 - f. Provide list of document conflicts and the manner in which they were resolved.
 - 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 - 3. Mark important additional information that was either shown schematically or omitted from original Drawings.
 - 4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
 - 5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION 01770

SECTION 02741 - HOT-MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. The Virginia Department of Transportation "Road and Bridge Specifications" 2002 Edition, Division II shall apply.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Hot-mix asphalt paving.

1.3 DEFINITIONS

- A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.
- B. VDOT: Virginia Department of Transportation.

1.4 SYSTEM DESCRIPTION

- A. Provide hot-mix asphalt paving according to materials, workmanship, and other applicable requirements of standard specifications of state or local VDOT.
 - 1. Standard Specification: Virginia Department of Transportation, "Road and Bridge Specifications", Latest Edition.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
- B. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
- C. Qualification Data: For manufacturer.

- D. Material Test Reports: For each paving material.
- E. Material Certificates: For each paving material, signed by manufacturers.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer.
 - 1. Manufacturer shall be a paving-mix manufacturer registered with VDOT.
- B. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated, as documented according to ASTM E 548.
- C. Regulatory Requirements: Comply with "Road and Bridge Standards" of VDOT for asphalt paving work.
- D. Asphalt-Paving Publication: Comply with AI MS-22, "Construction of Hot Mix Asphalt Pavements," unless more stringent requirements are indicated.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp or if the following conditions are not met:
 - 1. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

PART 2 - PRODUCTS

2.1 PAVING MATERIALS

- A. All products shall comply with Division II of the VDOT "Road and Bridge Standards", Latest Edition.

2.2 AUXILIARY MATERIALS

- A. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
- B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.
- C. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 ASPHALT PLACING

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
 - 1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
 - 2. Spread mix at minimum temperature of 250 deg F.
 - 3. Begin applying mix along high side of one-way slopes.
 - 4. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Promptly correct surface irregularities. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.3 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
 - 1. Sweep loose granular particles from surface of unbound-aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.
- B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
 - 1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

3.4 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors in areas inaccessible to rollers.
 - 1. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
 - 1. Average Density: 96 percent of reference laboratory density according to AASHTO T 245, but not less than 94 percent nor greater than 100 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.5 INSTALLATION TOLERANCES

- A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:
 - 1. Surface Course: Plus 1/4 inch, no minus.
- B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
 - 1. Surface Course: 1/8 inch.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.
 - 1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.
- B. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- E. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979.
 - 1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
 - 2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
 - a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with no fewer than 3 cores taken.

- b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.
- F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.7 DISPOSAL

- A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow excavated materials to accumulate on-site.

END OF SECTION 02741

SECTION 02751 - CEMENT CONCRETE PAVEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes exterior cement concrete pavement for the following:
 - 1. Curbs and gutters.
 - 2. Walkways.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixtures: For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Qualification Data: For manufacturer.
- D. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:
 - 1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.
- E. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:

1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Fiber reinforcement.
4. Admixtures.
5. Curing compounds.
6. Applied finish materials.
7. Bonding agent or epoxy adhesive.
8. Joint fillers.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
- C. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.
- D. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.6 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.1 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
 1. Use flexible or curved forms for curves with a radius 100 feet or less.

- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- B. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M or ASTM A 934/A 934M; with ASTM A 615/A 615M, Grade 60 deformed bars.
- C. Joint Dowel Bars: Plain steel bars, ASTM A 615/A 615M, Grade 60. Cut bars true to length with ends square and free of burrs.
- D. Tie Bars: ASTM A 615/A 615M, Grade 60, deformed.
- E. Hook Bolts: ASTM A 307, Grade A, internally and externally threaded. Design hook-bolt joint assembly to hold coupling against pavement form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.
- F. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete, and as follows:
 - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
 - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
- G. Epoxy Repair Coating: Liquid two-part epoxy repair coating, compatible with epoxy coating on reinforcement.
- H. Zinc Repair Material: ASTM A 780.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout the Project:
 - 1. Portland Cement: ASTM C 150, Type II, white.
- B. Normal-Weight Aggregates: ASTM C 33, Class 4S coarse aggregate, uniformly graded. Provide aggregates from a single source with documented service record data of at least

10 years' satisfactory service in similar pavement applications and service conditions using similar aggregates and cementitious materials.

1. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: ASTM C 94/C 94M.

2.4 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.
- B. Water: Potable.

2.5 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

2.6 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
 1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs for the trial batch method.
- B. Proportion mixtures to provide normal-weight concrete with the following properties:
 1. Compressive Strength (28 Days): 3000 psi.
 2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
 3. Slump Limit: 4 inches, plus or minus 1 inch.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
 1. For concrete mixes of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
 2. For concrete mixes larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
 3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proceed with concrete pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
- E. Epoxy-Coated Reinforcement: Use epoxy-coated steel wire ties to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M.
- F. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap of adjacent mats.

3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
 - 1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.
 - 1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
 - 2. Provide tie bars at sides of pavement strips where indicated.
 - 3. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

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- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
1. Locate expansion joints at intervals of 30 feet, unless otherwise indicated.
 2. Extend joint fillers full width and depth of joint.
 3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows to match jointing of existing adjacent concrete pavement:
1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
 3. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.
- E. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

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- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
 - D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
 - E. Do not add water to concrete during delivery or at Project site.
 - F. Do not add water to fresh concrete after testing.
 - G. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
 - H. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
 - I. Place concrete in two operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay welded wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed.
 - 1. Remove and replace concrete that has been placed for more than 15 minutes without being covered by top layer, or use bonding agent if approved by Architect.
 - J. Screed pavement surfaces with a straightedge and strike off.
 - K. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
 - L. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.
 - M. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 2. Do not use frozen materials or materials containing ice or snow.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mix designs.
- N. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.
 2. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
 3. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

3.8 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.

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- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
 - D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
 - 1. Moist Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

3.9 TOLERANCES

- A. Comply with tolerances of ACI 117 and as follows:
 - 1. Elevation: 1/4 inch.
 - 2. Thickness: Plus 3/8 inch, minus 1/4 inch.
 - 3. Surface: Gap below 10-foot- long, unlevelled straightedge not to exceed 1/4 inch.
 - 4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch.
 - 5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch.
 - 6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch.
 - 7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches.
 - 8. Joint Spacing: 3 inches.
 - 9. Contraction Joint Depth: Plus 1/4 inch, no minus.
 - 10. Joint Width: Plus 1/8 inch, no minus.

3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 - 1. Testing Frequency: Obtain at least 1 composite sample for each 100 cu. yd. or fraction thereof of each concrete mix placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

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2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
 4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
 5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
 6. Compressive-Strength Tests: ASTM C 39/C 39M; test 1 specimen at 7 days and 2 specimens at 28 days.
 - a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.
- C. Strength of each concrete mix will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
- G. Remove and replace concrete pavement where test results indicate that it does not comply with specified requirements.
- H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- 3.11 REPAIRS AND PROTECTION
- A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.
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- B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.
- C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 02751

SECTION 02920 - LAWNS AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Seeding.
 - 2. Lawn renovation.
 - 3. Erosion-control material(s).

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.
- D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.
- E. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for turfgrass sod, identifying source, including name and telephone number of supplier.

C. Qualification Data: For qualified landscape Installer.

D. Planting Schedule: Indicating anticipated planting dates for each type of planting.

E. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of lawns during a calendar year. Submit before expiration of required initial maintenance periods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful lawn establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.
2. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Seed: Deliver seed in original sealed, labeled, and undamaged containers.

1.7 PROJECT CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.

1. Spring Planting: March – June.
2. Fall Planting: September – October.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

1.8 MAINTENANCE SERVICE

A. Initial Lawn Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for not less than the following periods:

1. Seeded Lawns: 60 days from date of Substantial Completion.
 - a. When initial maintenance period has not elapsed before end of planting season, or if lawn is not fully established, continue maintenance during next planting season.
- B. Continuing Maintenance Proposal: From Installer to Owner, in the form of a standard yearly (or other period) maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
 1. Sun and Partial Shade: Proportioned by weight as follows:
 - a. 50 percent Kentucky bluegrass (*Poa pratensis*).
 - b. 30 percent chewings red fescue (*Festuca rubra* variety).
 - c. 10 percent perennial ryegrass (*Lolium perenne*).
 - d. 10 percent redtop (*Agrostis alba*).

2.2 TOPSOIL

- A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 6 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.
 1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
 - a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.

2.3 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural limestone containing a minimum of 80 percent calcium carbonate equivalent and as follows:
 - 1. Class: T, with a minimum of 99 percent passing through No. 8 sieve and a minimum of 75 percent passing through No. 60 sieve.
- B. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- C. Sand: Clean, washed, natural or manufactured, free of toxic materials.

2.4 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
 - 1. Organic Matter Content: 50 to 60 percent of dry weight.
 - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- B. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.5 PLANTING ACCESSORIES

- A. Selective Herbicides: EPA registered and approved, of type recommended by manufacturer for application.

2.6 FERTILIZER

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
 - 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

2.7 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

2.8 EROSION-CONTROL MATERIALS

- A. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-coir mesh, a minimum of 0.92 lb/sq. yd., with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches long.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
 - 1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
 - 2. Protect grade stakes set by others until directed to remove them.
- B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 LAWN PREPARATION

- A. Limit lawn subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - 1. Apply fertilizer directly to subgrade before loosening.
- C. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
 - 1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
 - 2. Loosen surface soil to a depth of at least 8 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till soil to a homogeneous mixture of fine texture.
 - a. Apply fertilizer directly to surface soil before loosening.
 - 3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
 - 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.
- D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
- E. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- F. Before planting, restore areas if eroded or otherwise disturbed after finish grading.

3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

- A. Prepare area as specified in "Lawn Preparation" Article.
- B. For erosion-control mats, install planting mix in two lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat and fasten as recommended by material manufacturer.
- C. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.

- D. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.5 SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
 - 2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow seed at a total rate of 5 to 8 lb/1000 sq. ft..
- C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with erosion-control mats where shown, installed and anchored according to manufacturer's written instructions.
- E. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.
 - 1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
 - 2. Bond straw mulch by spraying with asphalt emulsion at a rate of 10 to 13 gal./1000 sq. ft.. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.
- F. Protect seeded areas from hot, dry weather or drying winds by applying compost mulch within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a depth of 3/16 inch, and roll surface smooth.

3.6 LAWN MAINTENANCE

- A. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn. Provide materials and installation the same as those used in the original installation.
 - 1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
- B. Watering: Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to a depth of 4 inches.

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1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 2. Water lawn with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
- C. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
1. Mow grass to a height of 1 to 2 inches.
- D. Lawn Post-Fertilization: Apply fertilizer after initial mowing and when grass is dry.
1. Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. to lawn area.

3.7 SATISFACTORY LAWNS

- A. Lawn installations shall meet the following criteria as determined by Engineer:
1. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
- B. Use specified materials to reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

3.8 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris, created by lawn work, from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after lawn is established.
- C. Remove non-degradable erosion-control measures after grass establishment period.

END OF SECTION 02920

MANCHESTER MIDDLE SCHOOL BLEACHER REPAIR

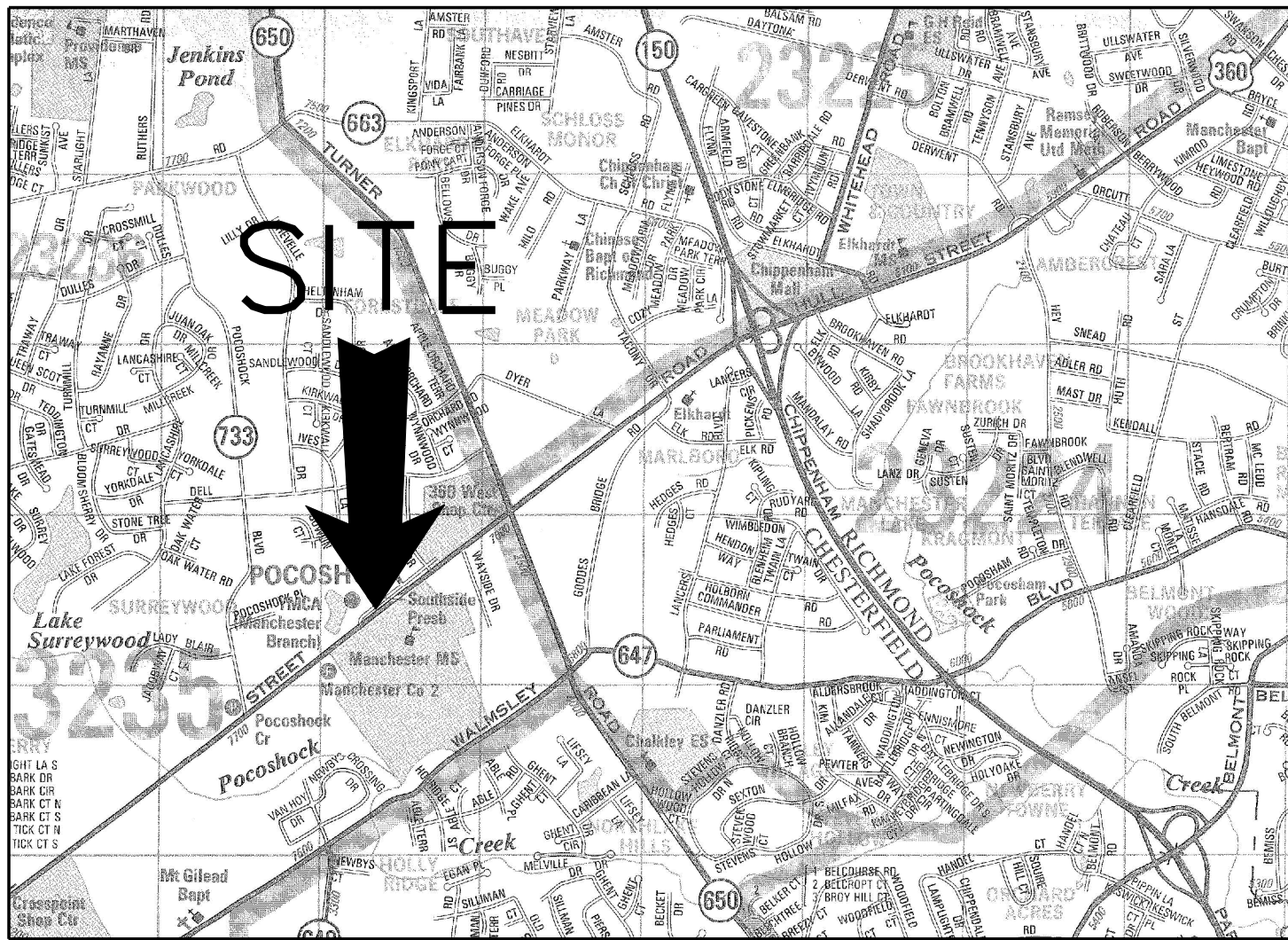


CHESTERFIELD COUNTY, VIRGINIA PREPARED BY:



Hankins and Anderson
Consulting Engineers

4880 Sadler Road Glen Allen, Virginia 23060
(804) 285 4171 (804) 217 8520 Fax
www.haengineers.com



MANCHESTER MIDDLE SCHOOL VICINITY MAP

SCALE 1"=2000'
GRAPHIC SCALE: 1"=2000'
0 2000 4000

GENERAL NOTES

- OWNER/DEVELOPER: CHESTERFIELD COUNTY
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 40
CHESTERFIELD, VA 23832
STUART W. CONNOCK, JR.
(804) 751-4484 FAX (804) 751-4486
- CONSULTING CIVIL ENGINEER: HANKINS & ANDERSON, INC.
4880 SADLER ROAD
SUITE 300
GLEN ALLEN, VIRGINIA 23060
WILLIAM C. WHEELER
(804) 285-4171, FAX (804) 217-8520
- SITE ADDRESS: MANCHESTER MIDDLE SCHOOL
7401 HULL STREET ROAD,
RICHMOND, VA 23235
- CONTOUR INTERVAL: FIVE FOOT
- DIMENSIONS AND RADII ARE TO EDGE OF PAVEMENT, WHERE APPLICABLE UNLESS INDICATED OTHERWISE.
- THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR THIS PROJECT FROM THE COMMONWEALTH OF VIRGINIA AND CHESTERFIELD COUNTY, WITH THE EXCEPTION OF THE LAND DISTURBANCE PERMIT.
- ALL PERMITS, WHICH MUST BE OBTAINED SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
- THE CONTRACTOR SHALL NOTIFY THE COUNTY ENGINEER 24 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- LOCATION OF EXISTING SEWER, WATER OR GAS LINES, CONDUITS OR OTHER STRUCTURES ACROSS, UNDERNEATH, OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS, AND IF SHOWN ARE ONLY APPROXIMATELY CORRECT. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS. FOR ASSISTANCE IN LOCATING EXISTING UTILITIES CALL "MISS UTILITY", 1-800-552-7001.
- ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION EXCEPT WHERE CHESTERFIELD COUNTY STANDARDS ARE APPLICABLE.
- THE OWNER SHALL BE RESPONSIBLE FOR THE VERIFICATION OF 95% COMPACTION OF THE SUBGRADE BY AN INDEPENDENT SOILS TESTING LABORATORY.
- THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE. IF THE MATERIAL, AFTER REWORKING, REMAINS UNSUITABLE, THEN THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PLACING CRUSHER RUN OR PAVEMENT. ANY SOFT MATERIAL SHALL SHALL BE REWORKED OR REPLACED.
- DAMAGE TO UTILITIES (INCLUDING UNDERGROUND) OR PROPERTY OF OTHERS BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS BY CONTRACTOR AT NO COST TO OWNER.
- EXISTING PAVEMENT AND OTHER SURFACES DISTURBED BY CONTRACTOR (WHICH ARE NOT INTENDED TO BE REMOVED) SHALL BE REPAIRED TO LIKE-NEW CONDITION OR REPLACED.
- THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL DITCHES, PIPES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL ALL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURES IN OPERABLE CONDITION.
- ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE UNLESS OTHERWISE SPECIFIED.
- THE EXISTING TOPOGRAPHICAL INFORMATION IS TAKEN FROM CHESTERFIELD COUNTY GIS AND MAY NOT SHOW ALL CONDITIONS OF THE SITE. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO ENSURE ALL ASPECTS OF THE CONSTRUCTION SCOPE ARE INCLUDED IN THE BID. COSTS TO THE OWNER FOR ADDITIONAL ITEMS THAT COULD HAVE BEEN IDENTIFIED BY A SITE VISIT WILL NOT BE APPROVED.

INDEX OF DRAWINGS

SHEET NO	DESCRIPTION
T1	TITLE SHEET
C100	EXISTING CONDITIONS AND DEMOLITION
C200	SITE PLAN
C300	SITE DETAILS
S100	GENERAL STRUCTURAL NOTES AND ABBREVIATIONS
S101	DEMOLITION PLAN
S102	NEW ADA PLATFORM PLAN
S103	NEW ADA RAMP PLAN
S300	SECTIONS AND DETAILS
S400	SECTIONS AND DETAILS
S401	SECTIONS AND DETAILS

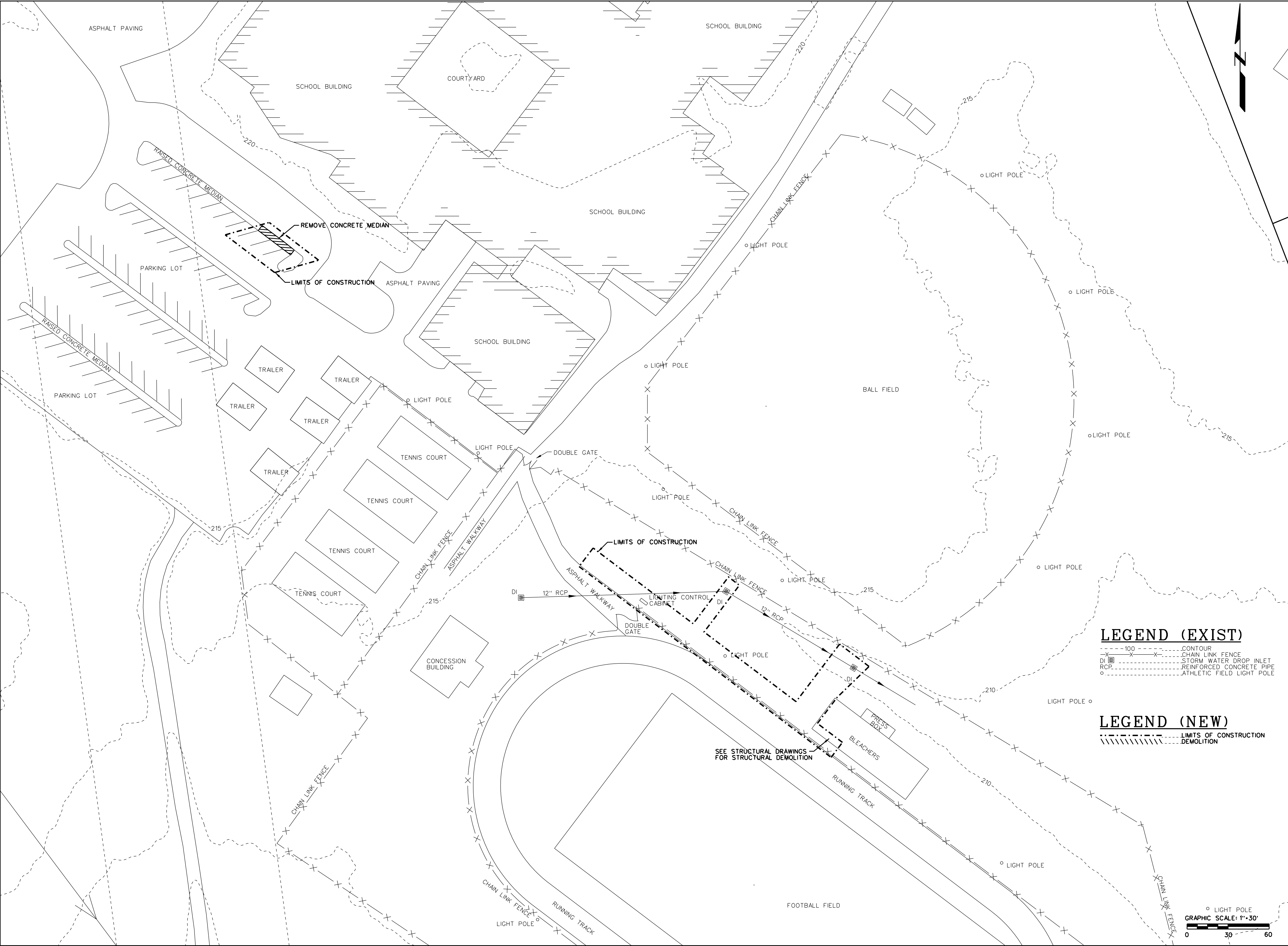



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REV	DATE	DESCRIPTION
1	02-24-06	PER COUNTY COMMENTS
2	03-08-06	PER COUNTY COMMENTS

PROJECT TITLE Manchester Middle School Bleacher Repair	SHEET TITLE TITLE SHEET
--	-----------------------------------

DATE FEBRUARY 3, 2006
H&A PROJECT NO. 3979.31
CLIENT PROJECT NO. -
SCALE As Noted
DRAWN BY JRA
CHECKED BY WCW
APPROVED BY BAL
SHEET NUMBER T1





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REV	DATE	DESCRIPTION
1	02-24-06	PER COUNTY COMMENTS
2	03-08-06	PER COUNTY COMMENTS

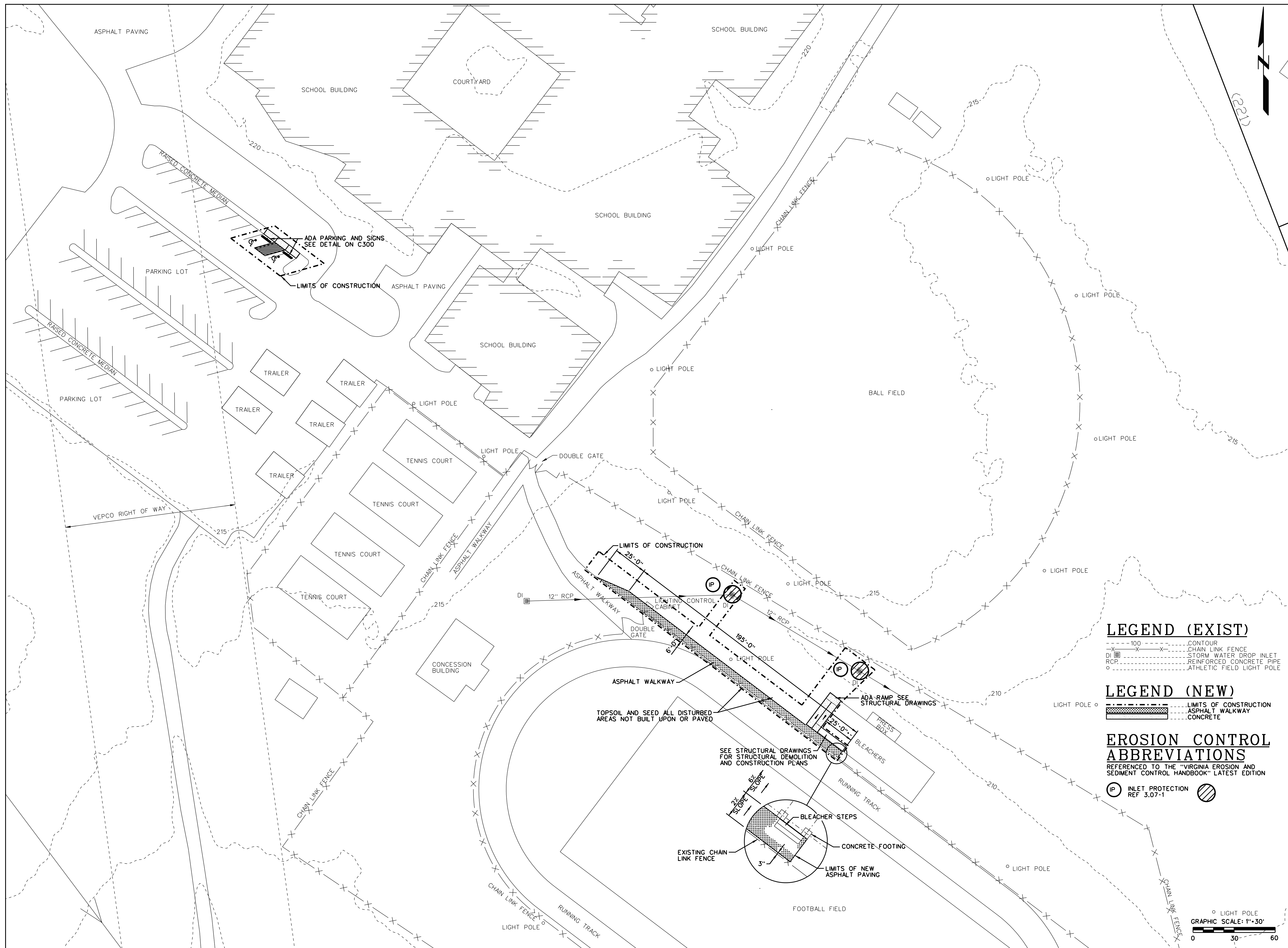
PROJECT TITLE
Manchester Middle School
Bleacher Repair

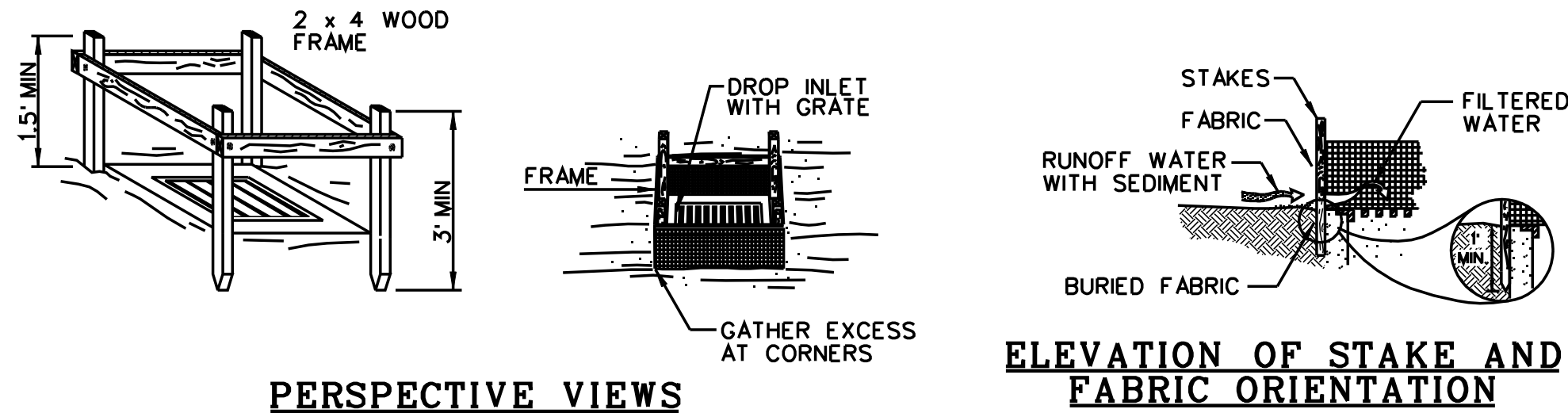
SHEET TITLE
EXISTING CONDITIONS AND DEMOLITION

DATE	FEBRUARY 3, 2006
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CLIENT PROJECT NO.	-
SCALE	1"=30'
DRAWN BY	JRA
CHECKED BY	WCW
APPROVED BY	BAL
SHEET NUMBER	C100

REV	DATE	DESCRIPTION
1	02-24-08	PER COUNTY COMMENTS
2	03-08-08	PER COUNTY COMMENTS

<div> <div>PROJECT TITLE</div> <div> Manchester Middle School Bleacher Repair </div> </div>		<div> <div>SHEET TITLE</div> <div> SITE PLAN </div> </div>	
DATE			
FEBRUARY 3, 2006			
H&A PROJECT NO.			
3979.31			
CLIENT PROJECT NO.			
-			
SCALE			
1"=30'			
DRAWN BY			
JRA			
CHECKED BY			
WCW			
APPROVED BY			
BAL			
SHEET NUMBER			
C200			



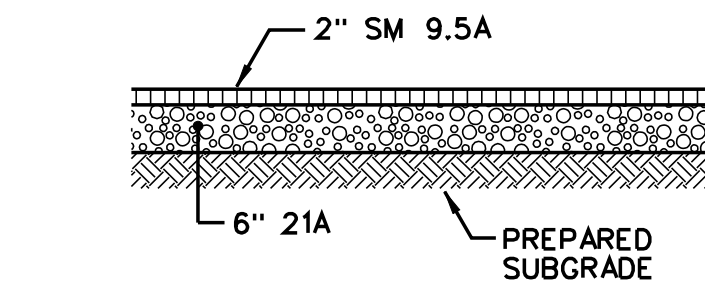


SILT FENCE DROP INLET PROTECTION

NO SCALE

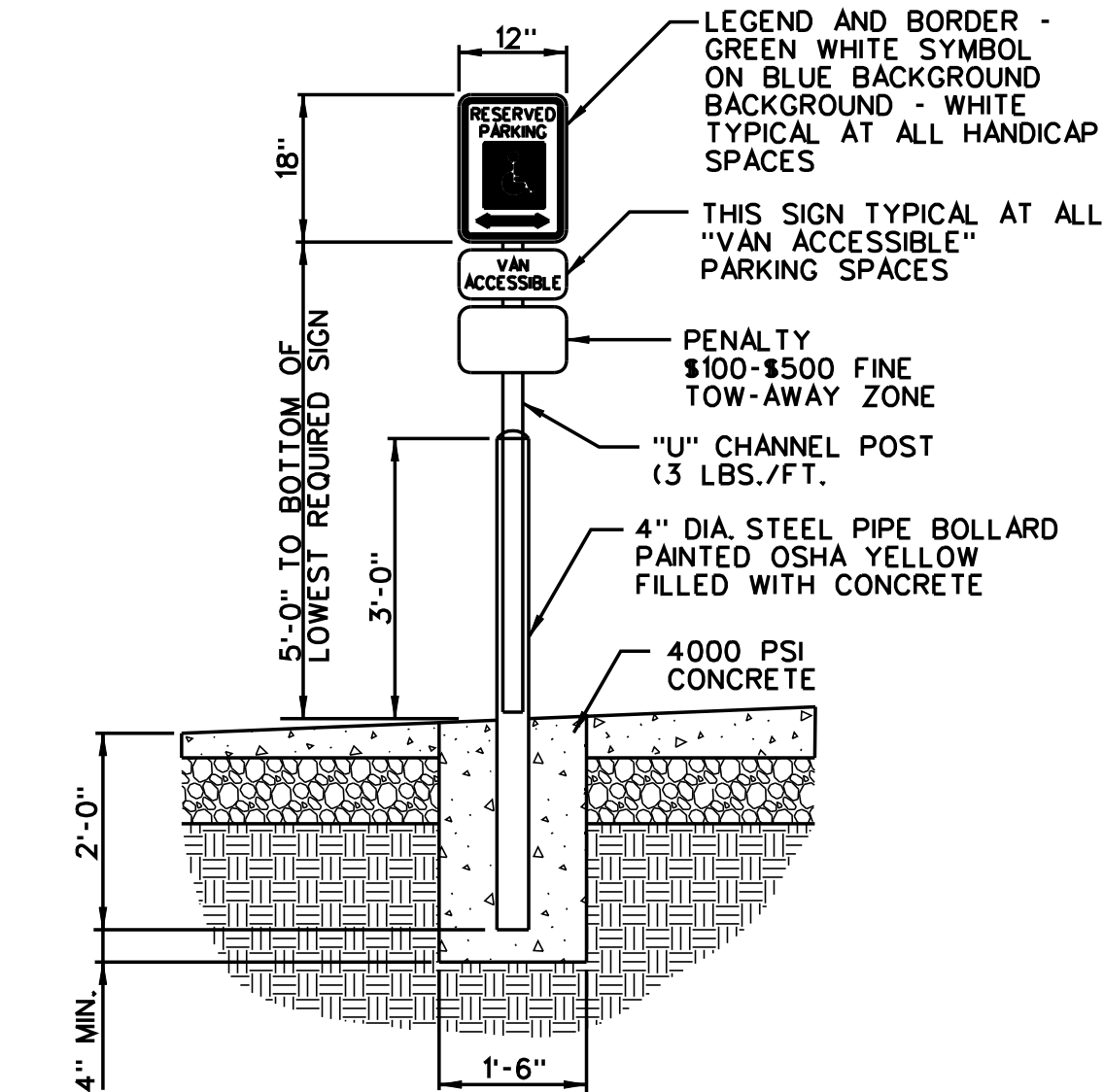
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.



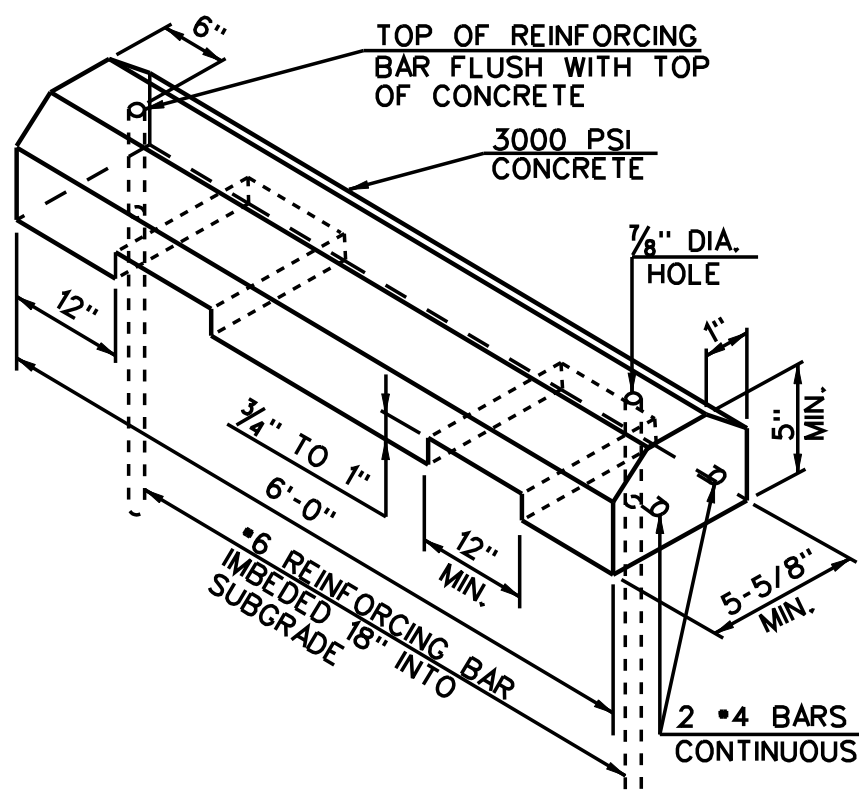
LIGHT DUTY PAVEMENT SECTION

NO SCALE



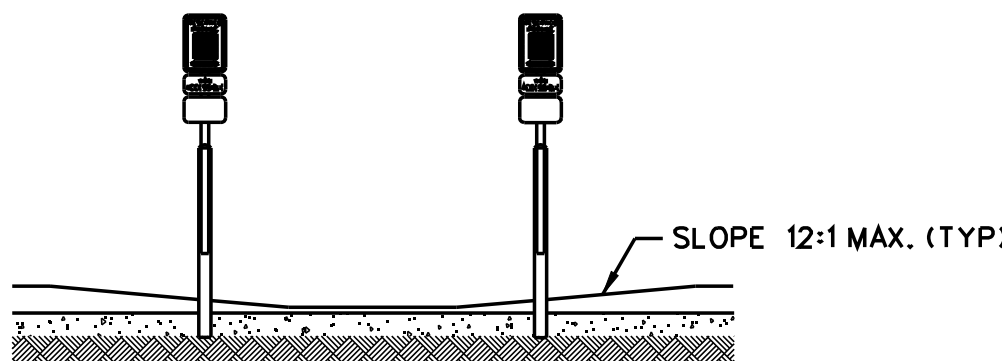
HANDICAP PARKING SIGN

NO SCALE

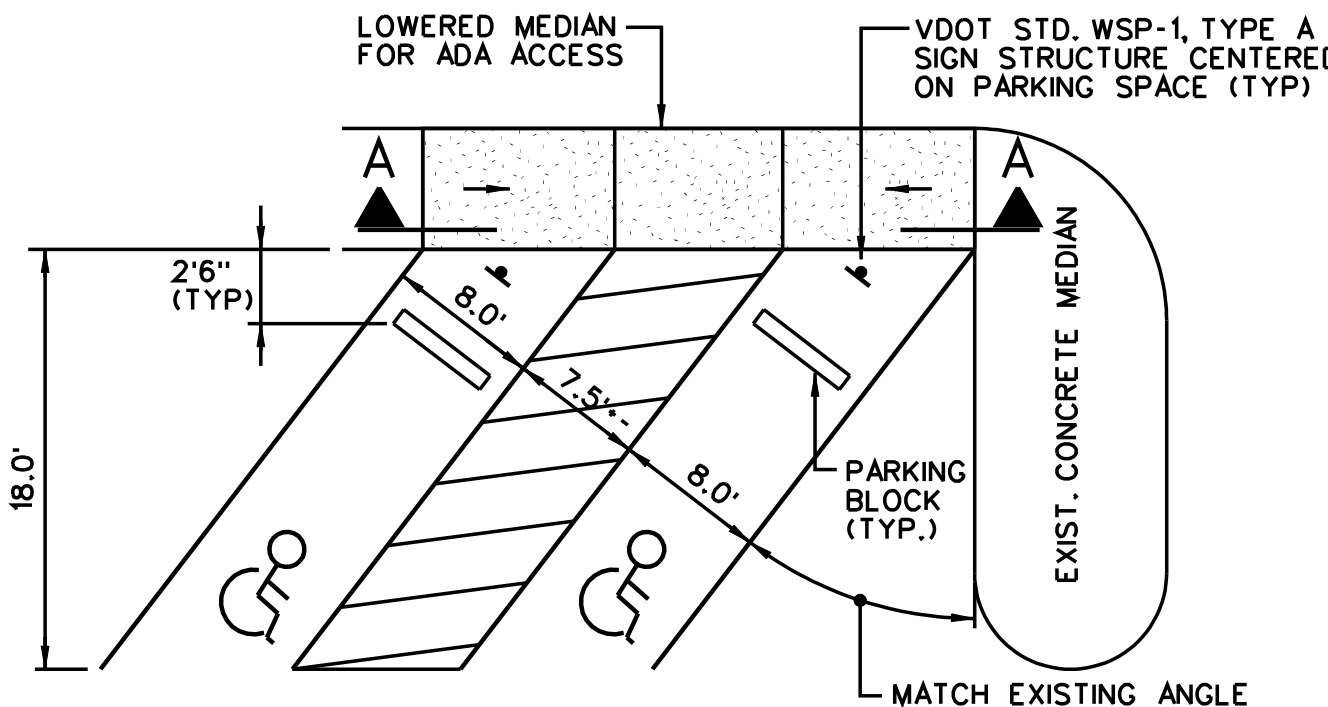


PARKING BLOCK

NO SCALE



SECTION A-A



HANDICAP PARKING DETAIL

NO SCALE

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www.haengineers.com

REV	DATE	DESCRIPTION
1	02-24-06	PER COUNTY COMMENTS
2	03-08-06	PER COUNTY COMMENTS

Manchester Middle School Bleacher Repair

SITE DETAILS

DATE	FEBRUARY 3, 2006
H&A PROJECT NO.	3979.31
CLIENT PROJECT NO.	-
SCALE	As Noted
DRAWN BY	JRA
CHECKED BY	WCW
APPROVED BY	BAL
SHEET NUMBER	C300

GENERAL STRUCTURAL NOTES

DESIGN LOADS

- | | |
|--------------------------------------|---------|
| 1. GRAVITY - SUPERIMPOSED LIVE LOADS | |
| BLEACHER SEATING | 100 PSF |
| EGRESS STAIRS | 100 PSF |





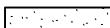

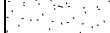

GENERAL

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (IBC 2000 AS AMENDED) AND ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES OF THE LOCAL JURISDICTION.
2. THE CONTRACTOR SHALL VERIFY ALL FIELD MEASUREMENTS, EXISTING DIMENSIONS, ELEVATIONS, AND THE SHAPES AND SIZES OF EXISTING STRUCTURAL MEMBERS SHOWN AND NOT SHOWN ON THE CONTRACT DRAWINGS PRIOR TO BEGINNING WORK. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ALL DISCREPANCIES THAT WOULD RESULT IN REVISIONS TO THE CONTRACT DRAWINGS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ERECTION OF ALL TEMPORARY BRACING, FORMWORK, SHEETING AND SHORING NECESSARY TO PERFORM THE WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR SAFETY PRECAUTIONS AND PROGRAMS AS THEY RELATE TO THE WORK OF THIS PROJECT.
5. THE CONTRACTOR SHALL SUBMIT THE REQUIRED SHOP DRAWINGS FOR REVIEW PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND ACCEPT FULL RESPONSIBILITY FOR DIMENSIONAL CORRECTNESS. UNDER NO CIRCUMSTANCES SHALL REPRODUCTIONS OF CONTRACT DRAWINGS BE USED AS SHOP DRAWINGS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

DEMOLITION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR SAFETY PRECAUTIONS AS THEY RELATE TO THIS WORK.
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND SHAPES AND SIZES OF EXISTING STRUCTURAL MEMBERS INDICATED TO BE REMOVED. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ALL DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ERECTION OF ALL TEMPORARY BRACING AND SHORING NECESSARY TO PREVENT MOVEMENT, SETTLEMENT OR COLLAPSE OF STRUCTURE OR ELEMENT TO BE DEMOLISHED AND ADJACENT STRUCTURE TO REMAIN.
4. THE CONTRACTOR SHALL PROTECT STRUCTURAL ELEMENTS AND ADJACENT FINISHES TO REMAIN FROM DAMAGE DURING THE DEMOLITION PROCESS.
5. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF THE SAFETY OF THE STRUCTURE APPEARS TO BE ENDANGERED. IN SUCH CASES, THE CONTRACTOR SHALL TAKE PRECAUTIONS TO TEMPORARILY SUPPORT THE STRUCTURE UNTIL A DETERMINATION IS MADE FOR CONTINUING THE DEMOLITION OPERATION.
6. LOCATE DEMOLITION EQUIPMENT AND PROMPTLY REMOVE STRUCTURAL DEBRIS TO AVOID IMPOSING EXCESSIVE LOADS ON SUPPORTING STRUCTURE.

HATCH PATTERN LEGEND

	CONCRETE (PLAN)		POROUS FILL
	CONCRETE (SECTION)		GROUT
	CMU (PLAN & SECTION)		STEEL
	VENEER (PLAN & SECTION)		EARTH

FOUNDATION

1. FOUNDATIONS FOR THIS STRUCTURE ARE SPREAD FOOTINGS BEARING ON EITHER FIRM VIRGIN SOIL OR COMPACTED STRUCTURAL FILL. IN THE ABSENCE OF A GEOTECHNICAL ENGINEERING REPORT, AN ALLOWABLE BEARING CAPACITY OF 1500 PSF HAS BEEN ASSUMED. A GEOTECHNICAL ENGINEER SHALL VERIFY, PRIOR TO POURING, THAT THE SOIL IS CAPABLE OF SUSTAINING SUCH A LOAD.
2. ALL EXTERIOR SPREAD FOOTINGS SHALL BEAR A MINIMUM OF 2'-0" BELOW FINISH GRADE. THE CONTRACTOR SHALL PROTECT ALL FOOTINGS FROM FROST DURING CONSTRUCTION.
3. ALL WALLS SUBJECT TO LATERAL LOAD DUE TO UNBALANCED FILL SHALL BE BRACED PLUMB UNTIL BACKFILL HAS BEEN PLACED AND COMPACTED AND SHALL REMAIN BRACED UNTIL THE PERMANENT STRUCTURE ABOVE IS IN PLACE AND CAPABLE OF RESISTING ALL LOADS.

CAST-IN-PLACE CONCRETE

1. ALL CAST IN PLACE CONCRETE SHALL BE NORMAL WEIGHT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS UNLESS OTHERWISE NOTED.
2. ALL REINFORCING STEEL SHALL BE ASTM A615, GRADE 60.
3. RAMP SLAB SHALL BE REINFORCED WITH 6x6 - W2.1XW2.1 WELDED WIRE FABRIC LOCATED 1½" FROM THE TOP OF SLAB UNLESS OTHERWISE NOTED.
4. ALL WELDED WIRE FABRIC SHALL BE ASTM A185, IN FLAT SHEETS, LAPPED A MINIMUM OF ONE FULL WIRE SPACE PLUS 2" WHEN SPLICED.
5. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 301-96 "SPECIFICATIONS FOR STRUCTURAL CONCRETE", ACI 318-99 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND THE PROJECT SPECIFICATIONS UNLESS OTHERWISE NOTED OR DETAILED ON THE CONTRACT DRAWINGS.
6. DETAILING OF ALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI DETAILING MANUAL - ACI SP-66(94).
7. ALL REINFORCING STEEL SHALL BE HELD SECURELY IN PLACE TO PREVENT DISLOCATION DURING CONCRETE PLACEMENT.

MASONRY

1. ALL CONCRETE MASONRY WORK SHALL BE IN ACCORDANCE WITH ACI 530-99 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" AND ACI 530.1-99 "SPECIFICATIONS FOR MASONRY STRUCTURES". MINIMUM DESIGN COMPRESSIVE STRENGTH (F_m) OF MASONRY SHALL BE 2150 PSI.

MATERIAL SPECIFICATIONS:
HOLLOW CONCRETE MASONRY UNITS ASTM C90, NORMAL WEIGHT
SOLID CONCRETE MASONRY UNITS ASTM C90, NORMAL WEIGHT
MORTAR ASTM C270, TYPE M OR S
GROUT ASTM C476.
2. ALL ENGINEERED CONCRETE MASONRY SHALL BE INSPECTED BY A QUALIFIED MASONRY INSPECTOR.
3. ALL REINFORCING BARS IN MASONRY SHALL BE FULLY GROUTED FOR THEIR ENTIRE LENGTH.
4. ALL MASONRY BELOW GRADE SHALL BE SOLID OR GROUT FILLED.
5. ALL REINFORCING BARS IN MASONRY SHALL BE LAP-SPLICED 48 BAR DIAMETERS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WORK SHALL BE IN ACCORDANCE WITH THE AISC "MANUAL OF STEEL CONSTRUCTION – ALLOWABLE STRESS DESIGN", 9TH EDITION, WITH SUPPLEMENTS.

MATERIAL SPECIFICATIONS:
ALL STEEL SHAPES,
PLATES AND BARS
PIPE
ANCHOR BOLTS

ASTM A36
ASTM A53, TYPE E, GRADE B
ASTM A307
2. ALL STRUCTURAL STEEL, BOLTS AND NUTS SHALL BE GALVANIZED, G60 MIN..
3. ALL ANCHORAGES TO SOLID OR GROUT FILLED CMU SHALL BE MADE USING A TWO-PART VINYLESTER BLEND RESIN ADHESIVE AND GALVANIZED ASTM A307 THREADED ROD INSTALLED IN A PREDRILLED HOLE PER THE MANUFACTURER'S INSTRUCTIONS. THE MINIMUM EMBEDMENT AND ALLOWABLE SHEAR AND TENSION CAPACITIES SHALL BE BASED ON THE HILTI HIT HY 150 SYSTEM OR OTHER APPROVED SYSTEM WITH EQUIVALENT OR GREATER CAPACITIES INCLUDING REQUIRED REDUCTIONS DUE TO SPACING AND EDGE DISTANCES.
4. ALL SHOP AND FIELD WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES.

STRUCTURAL ABBREVIATIONS

Ø	AT	(N)	NEW
A.B.	ANCHOR BOLT	N. WT.	NORMAL WEIGHT
ACI	AMERICAN CONCRETE INSTITUTE	N.T.S.	NOT TO SCALE
ADDL	ADDITIONAL	NOM	NOMINAL
ADH	ADHESIVE		
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	O.C.	ON CENTER
ALUM	ALUMINUM	O.D.	OUTSIDE DIAMETER
BLKG	BLOCKING	P.C.	PRECAST
BLW	BELOW	PL	PLATE
BM	BEAM	PROJ	PROJECT
BOT	BOTTOM		
		REINF	REINFORCING
C.C.	CENTER TO CENTER		
C.I.P.	CAST IN PLACE		
C.J.	CONTROL JOINT	S.O.G.	SLAB ON GRADE
CL	CENTER LINE	SECT	SECTION
CLR	CLEAR	SIM	SIMILAR
CMU	CONCRETE MASONRY UNIT	SL	SLOPE
CONC	CONCRETE	SPA	SPACE(S)(ING)
CONN	CONNECTION	SPEC	SPECIFICATION
CONST	CONSTRUCTION	STD	STANDARD
CONT	CONTINUOUS	STL	STEEL
CONTR	CONTRACTOR	STRUCT	STRUCTURE(AL)
COORD	COORDINATE	SUP	SUPPORT
CTR	CENTER		
		T&B	TOP AND BOTTOM
D	DEPTH	T.O.F.	TOP OF FOOTING
D.L.	DEAD LOAD	T.O.S.	TOP OF STEEL
DET	DETAIL	T.O.SL	TOP OF SLAB
DIA	DIAMETER	T.O.W.	TOP OF WALL
DIAG	DIAGONAL	THK	THICK(NESS)
DIM	DIMENSION	TYP	TYPICAL
DWG	DRAWING		
DWL	DOWEL	U.O.N.	UNLESS OTHERWISE NOTED
(E)	EXISTING	V.I.F.	VERIFY IN FIELD
E.F.	EACH FACE	VERT	VERTICAL
E.J.	EXPANSION JOINT		
E.O.S.	EDGE OF SLAB	W/	WITH
E.S.	EACH SIDE	WD	WOOD
E.W.	EACH WAY	W.W.F.	WELDED WIRE FABRIC
EA	EACH		
ELEV	ELEVATION		
EMBED	EMBEDMENT		
ENG	ENGINEER		
EQ	EQUAL		
EXIST	EXISTING		
FDN	FOUNDATION		
FRMG	FRAMING		
FTG	FOOTING		
G.C.	GENERAL CONTRACTOR		
GALV	GALVANIZED		
GEN	GENERAL		
GR	GRADE		
H.S.	HIGH STRENGTH		
HD	HEADED		
HGT	HEIGHT		
HK	HOOK		
HORZ	HORIZONTAL		
I.D.	INSIDE DIAMETER		
IBC	INTERNATIONAL BUILDING CODE		
JT	JOINT		
L.L.	LIVE LOAD		
LGMF	LIGHT GAGE METAL FRAMING		
LONG	LONGITUDINAL		
MAX	MAXIMUM		
MFR	MANUFACTURER		
MIN	MINIMUM		
MSNY	MASONRY		
MTL	METAL		



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REV	DATE	DESCRIPTION
1	02-24-04	PER COUNTY COMMENTS
2	03-08-04	PER COUNTY COMMENTS

PROJECT TITLE	Manchester Middle School Bleacher Repair
SHEET TITLE	GENERAL STRUCTURAL NOTES & ABBREVIATIONS

DATE	FEBRUARY 3, 2006
H&A PROJECT NO.	3979.31
CLIENT PROJECT NO.	-
SCALE	NONE
DRAWN BY	RSR
CHECKED BY	DCC
APPROVED BY	EJA
SHEET NUMBER	S100



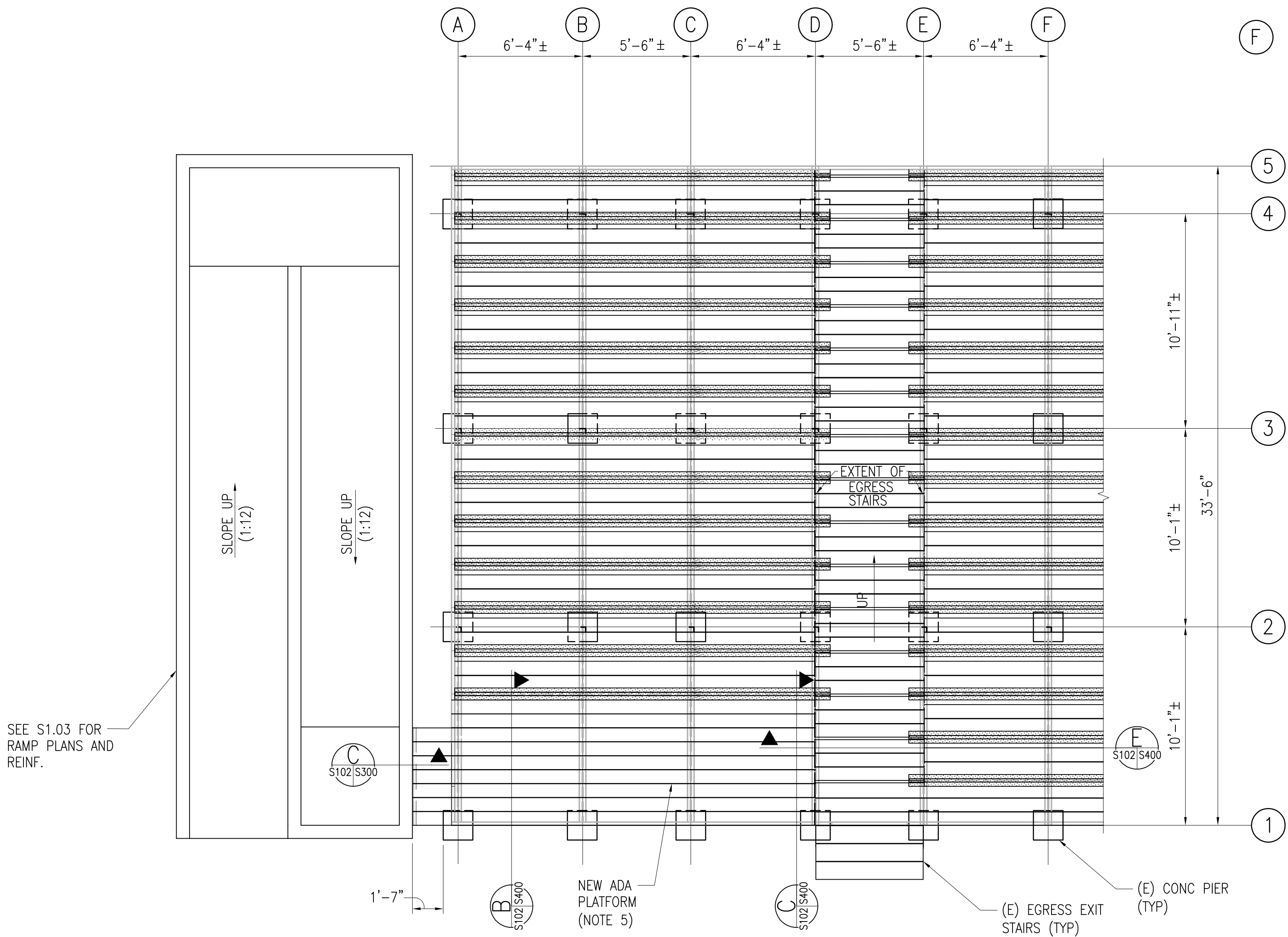
SCALE: 1/4"=1'-0"

PLAN GENERAL NOTES:

1. REMOVE ALL ALUMINUM PLANKING AND SUPPORTING MEMBERS, EXCEPT W BEAMS, FOR THE FIRST THREE AISLES AND FIRST TWO ROWS OF SEATS AS INDICATED.
2. EXISTING ALUMINUM PLANKING MAY BE REUSED FOR NEW PLATFORM.
3. FIRST 5'-0" OF PERIMETER RAILING AT PLATFORM SIDE OF BLEACHER TO BE REMOVED.
4. PERIMETER RAILING IN FRONT OF NEW PLATFORM TO BE REMOVED AND REPOSITIONED TO NEW HEIGHT SHOWN IN DRAWINGS.
5. CUT AND RECAP 5 INCHES OFF EACH ROW OF EXISTING SEATING PLANKS TO REMAIN AS INDICATED ABOVE.
6. SEE DWG S100 FOR GENERAL STRUCTURAL NOTES AND ABBREVIATIONS.

REV	DATE	DESCRIPTION
1	02-24-06	PER COUNTY COMMENTS
2	03-08-06	PER COUNTY COMMENTS

<div>PROJECT TITLE</div> <div> <h1>Manchester Middle School Bleacher Repair</h1> </div>	<div>SHEET TITLE</div> <div> <h1>DEMOLITION PLAN</h1> </div>
<div>DATE</div> <div> FEBRUARY 3, 2006 </div>	
<div>H&A PROJECT NO.</div> <div> 3979.31 </div>	
<div>CLIENT PROJECT NO.</div> <div> - </div>	
<div>SCALE</div> <div> 1/4"=1'-0" </div>	
<div>DRAWN BY</div> <div> RSR </div>	
<div>CHECKED BY</div> <div> DCC </div>	
<div>APPROVED BY</div> <div> EJA </div>	
<div>SHEET NUMBER</div> <div> S101 </div>	



NEW ADA PLATFORM AND ADA RAMP PLAN

SCALE: 1/4"=1'-0"

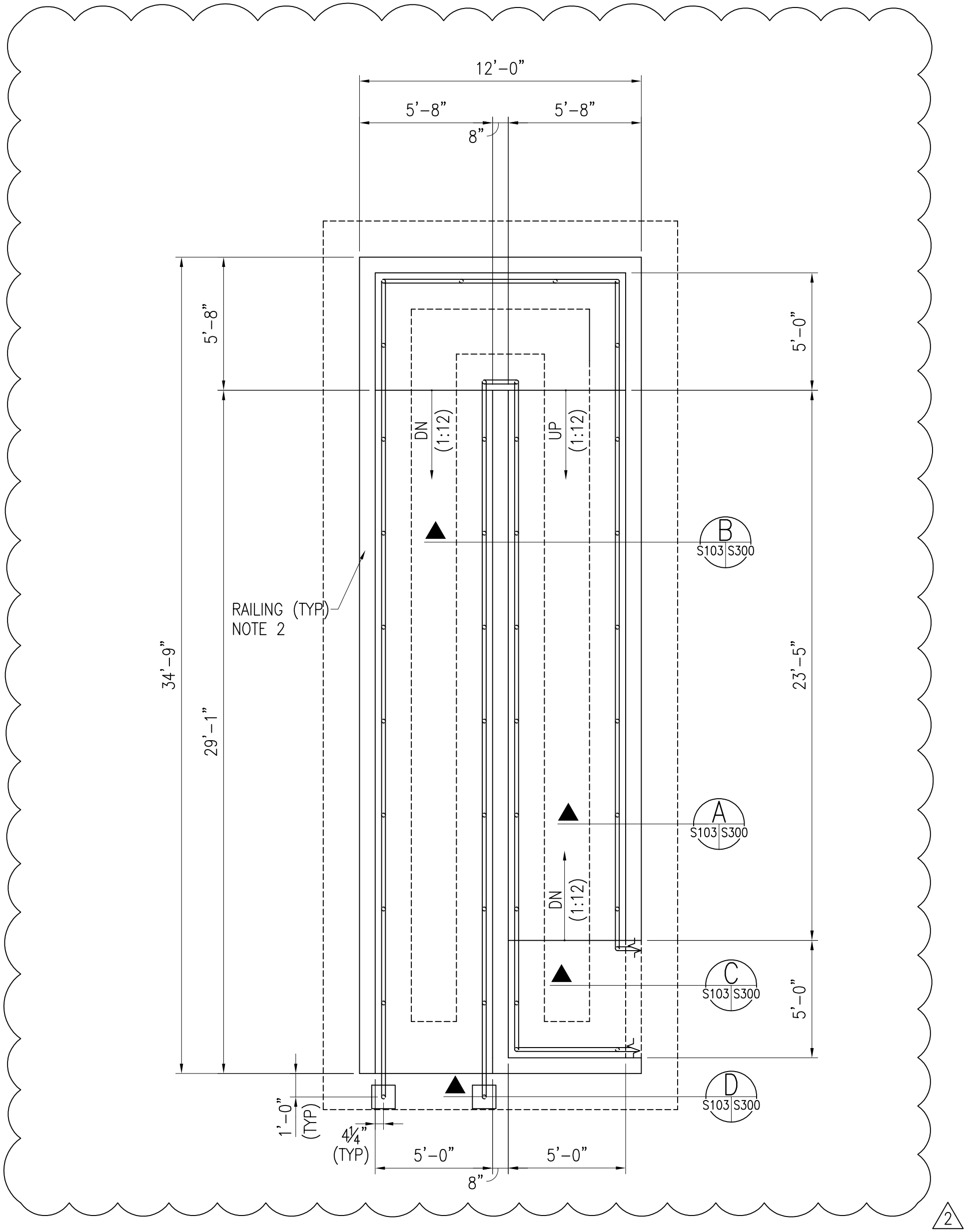
NOTES:

1. NEW PLATFORM STRUCTURE SHALL BE COMPLETED PRIOR TO COMPLETION OF RAMP CONSTRUCTION IN ORDER TO DETERMINE TOP ELEVATION OF RAMP.
2. NEW PLANKING TO MATCH EXISTING ALUMINUM PLANKS.
3. REPLACE EXISTING RAILING IN FRONT OF PLATFORM TO HEIGHT SPECIFIED ON DWG S400.
4. RECAP ENDS OF ALL CUT ALUMINUM SEATING PLANKS.
5. ADA PLATFORM PROVIDES EIGHT WHEELCHAIR SPACES WITH COMPANION SEATING PROVIDED BY THE EXISTING BLEACHER SEAT AT THE BACK OF THE ADA PLATFORM.
6. SEE DWG S100 FOR GENERAL STRUCTURAL NOTES AND ABBREVIATIONS.

REV	DATE	DESCRIPTION
1	02-24-06	PER COUNTY COMMENTS
2	03-08-06	PER COUNTY COMMENTS

PROJECT TITLE	SHEET TITLE
Manchester Middle School Bleacher Repair	NEW ADA PLATFORM PLAN

DATE	FEBRUARY 3, 2006
H&A PROJECT NO.	3979.31
CLIENT PROJECT NO.	-
SCALE	1/4"=1'-0"
DRAWN BY	RSR
CHECKED BY	DCC
APPROVED BY	EJA
SHEET NUMBER	S102

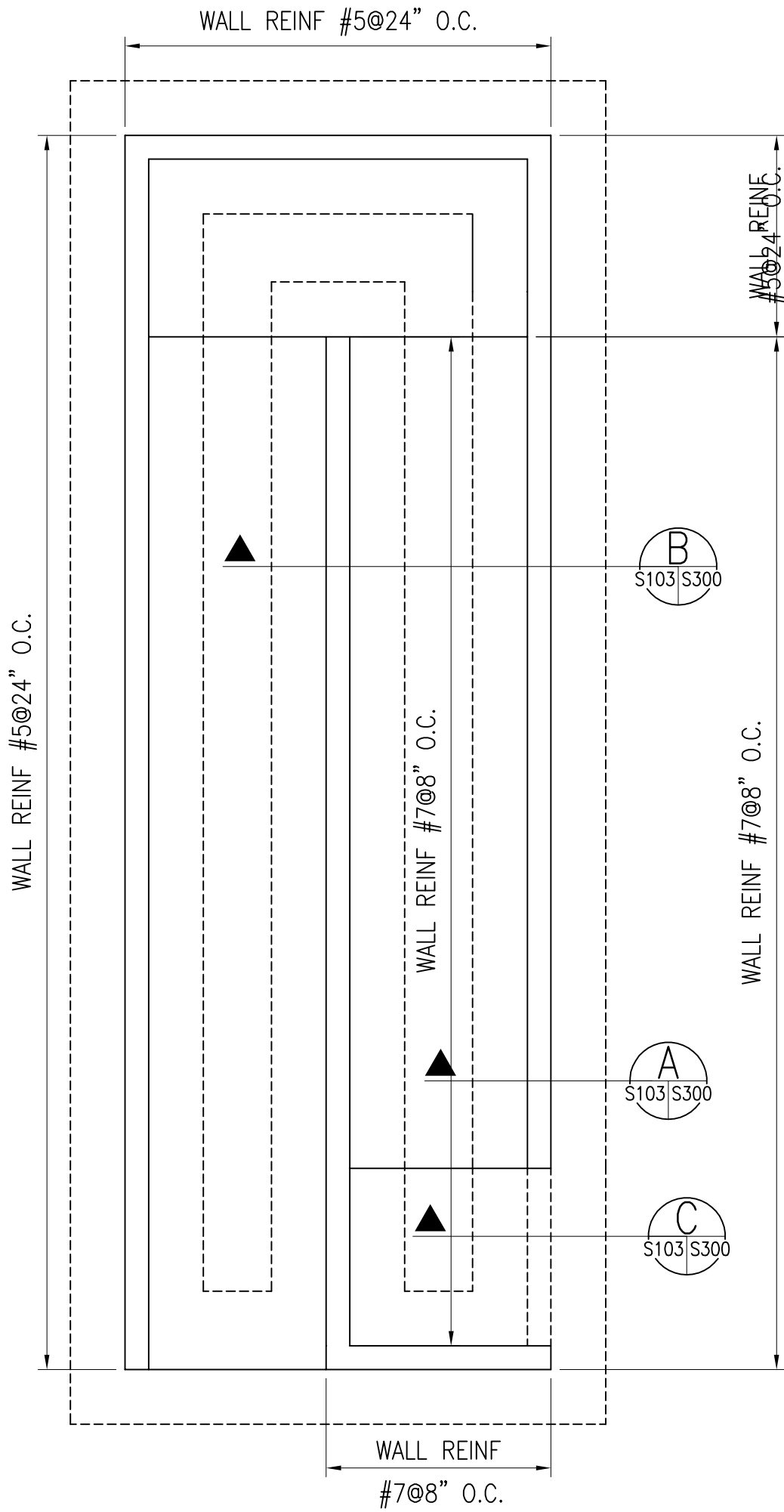


DIMENSIONAL PLAN

SCALE: 1/4"=1'-0"

NOTES:

1. TOP OF SLAB ON GRADE AND TOP OF WALL ELEVATION AT TOP LANDING TO MATCH TOP OF PLANKING ELEVATION OF NEW PLATFORM.
2. SEE DWG S300 FOR TYPICAL RAILING FOR RAMP.
3. SEE DWG S100 FOR GENERAL STRUCTURAL NOTES AND ABBREVIATIONS.



REINFORCING PLAN

SCALE: 1/4"=1'-0"

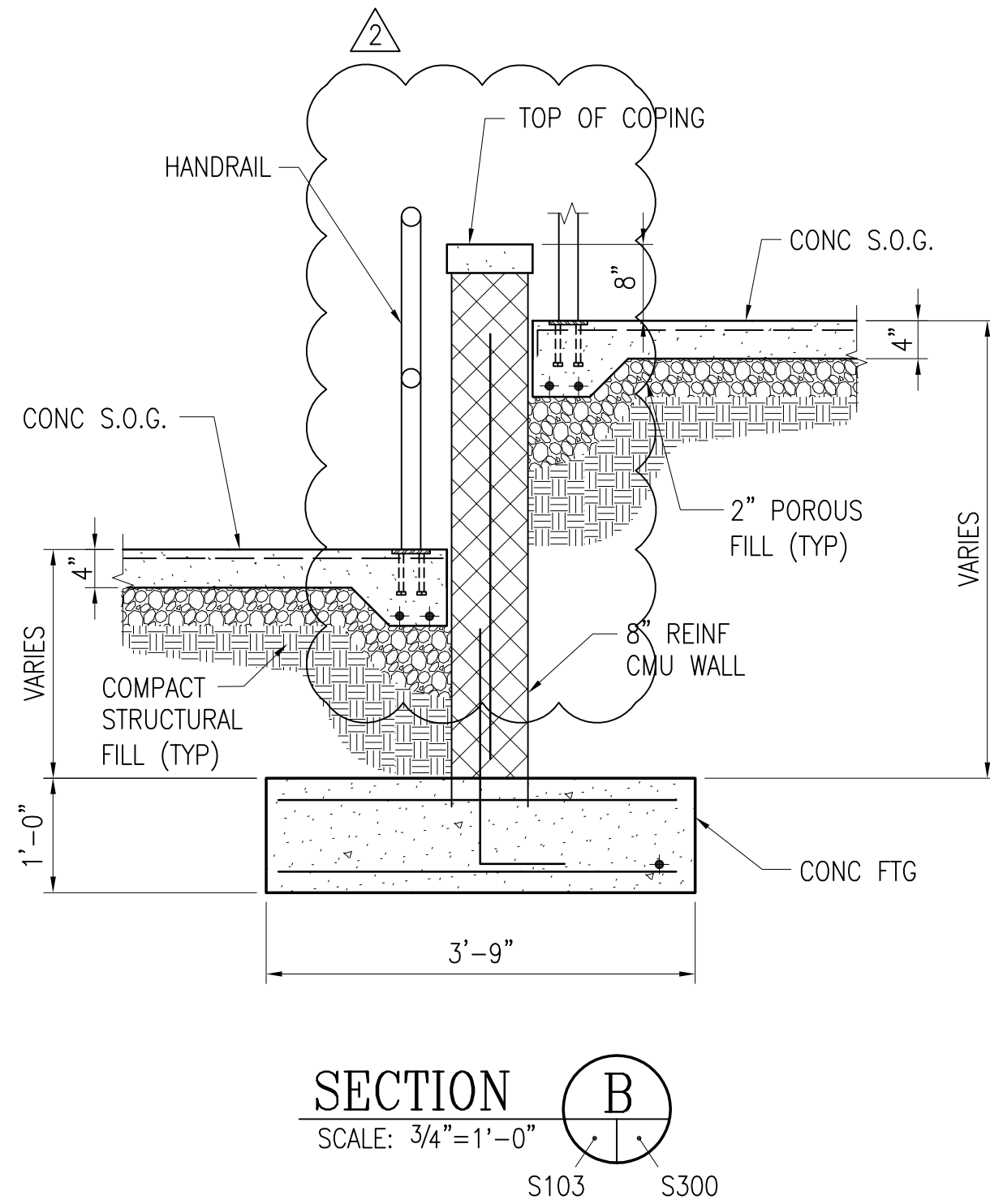
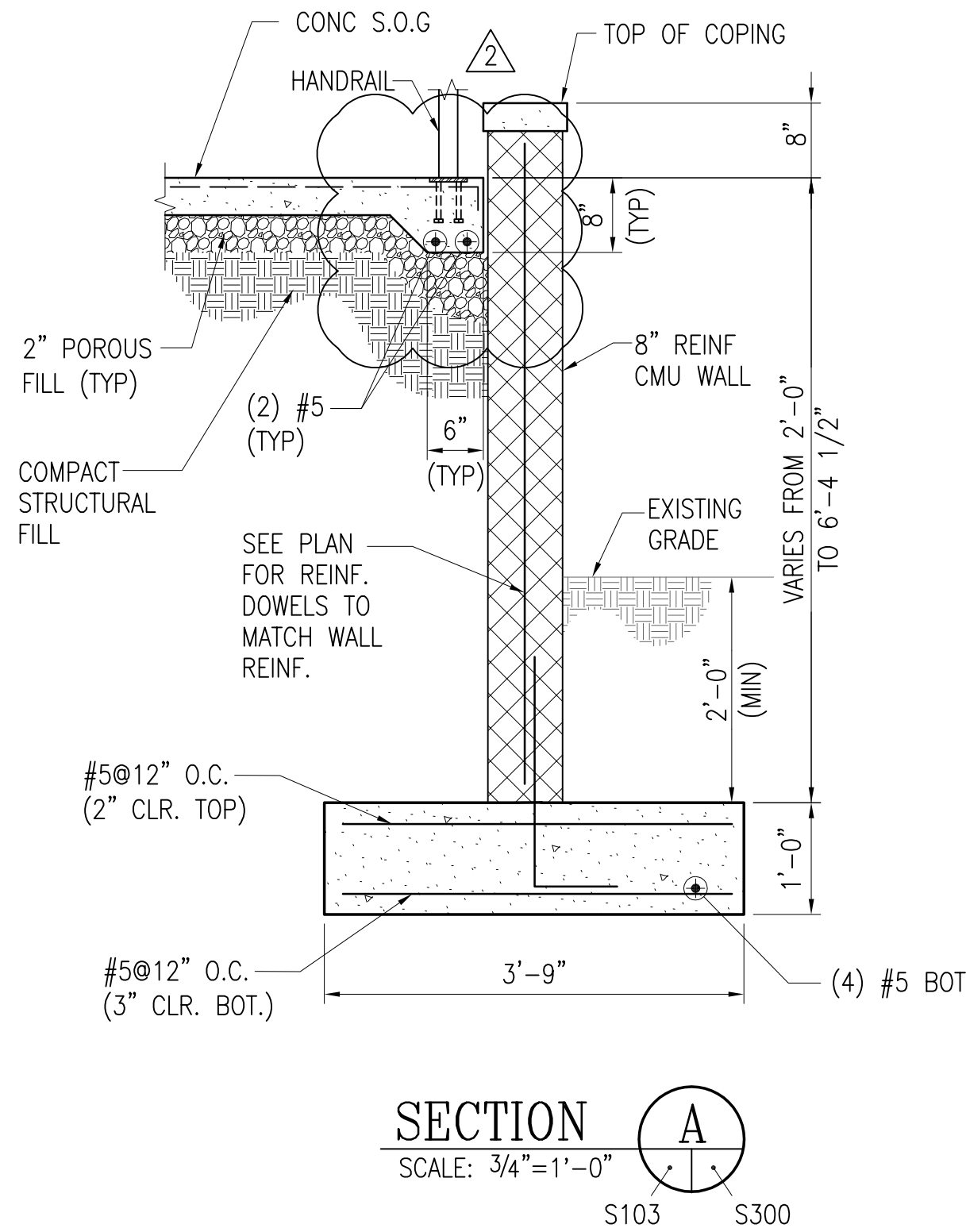
NOTES:

1. CMU AT TOP LANDING AT ENTRANCE TO BLEACHERS TO BE GROUTED SOLID.
2. ALL CMU CELLS WITH ANCHORAGES ATTACHED TO BE GROUTED SOLID.
3. REINFORCING TO EXTEND FULL HEIGHT OF WALL.
4. SEE DWG S100 FOR GENERAL STRUCTURAL NOTES AND ABBREVIATIONS.

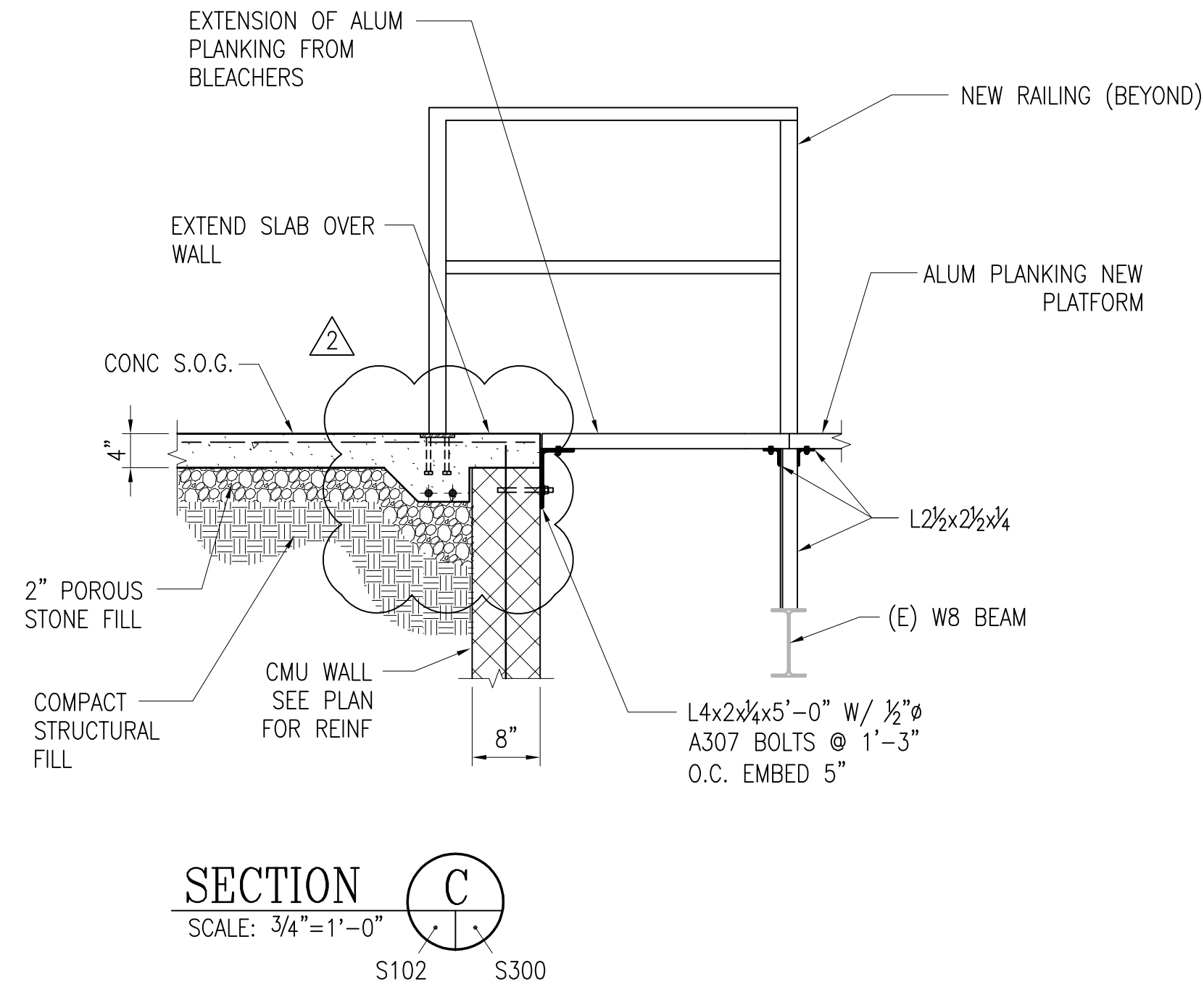
REV	DATE	DESCRIPTION
1	02-24-06	PER COUNTY COMMENTS
2	03-08-06	PER COUNTY COMMENTS

PROJECT TITLE Manchester Middle School Bleacher Repair	SHEET TITLE NEW ADA RAMP PLAN
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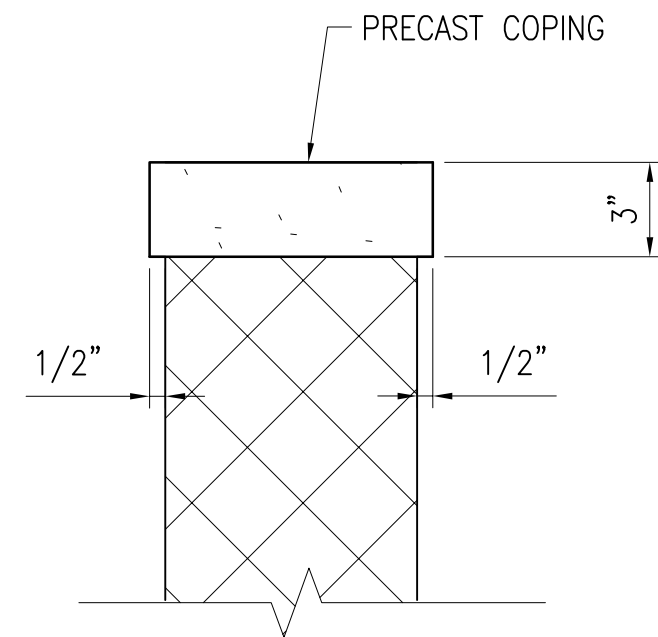
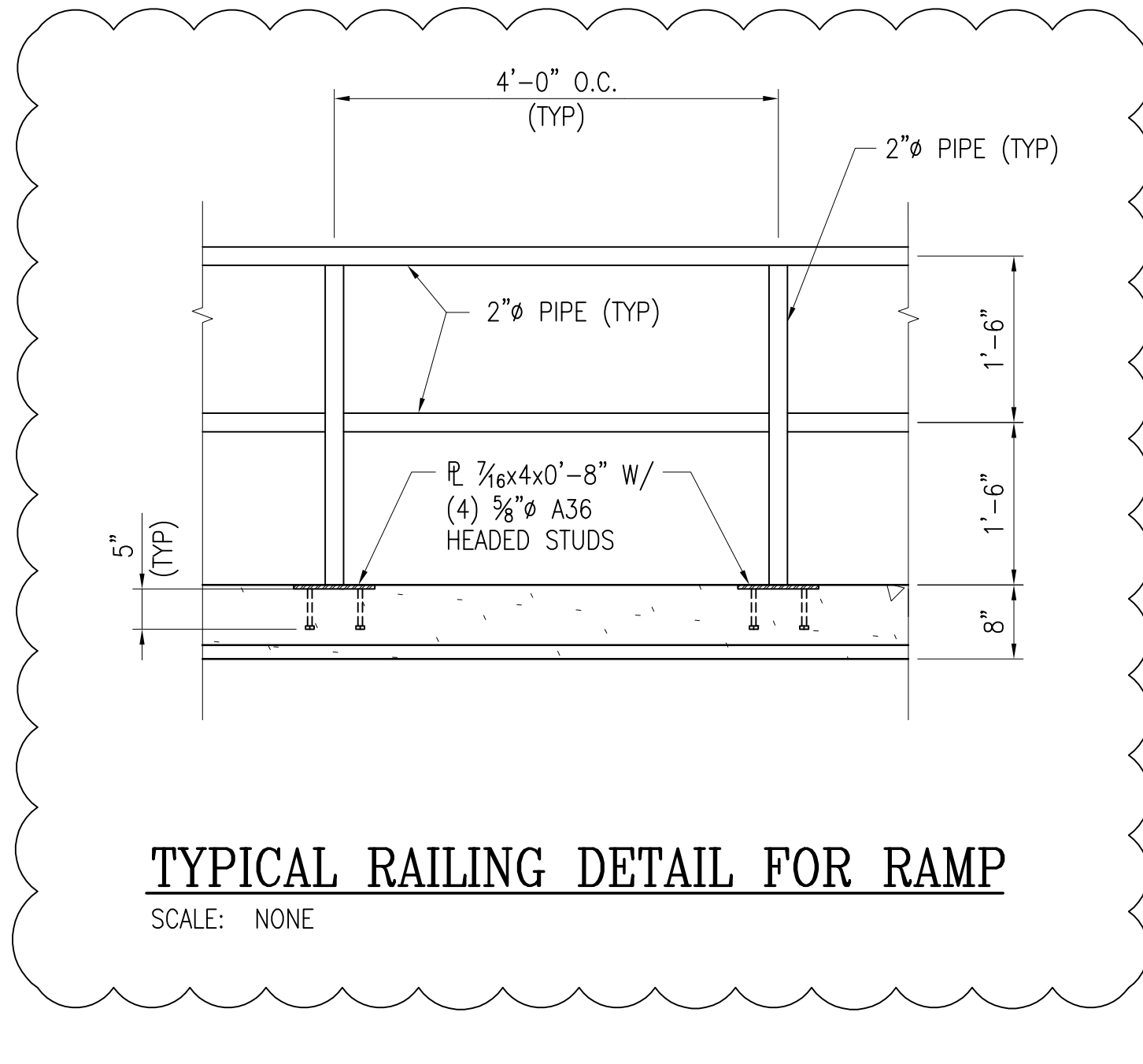
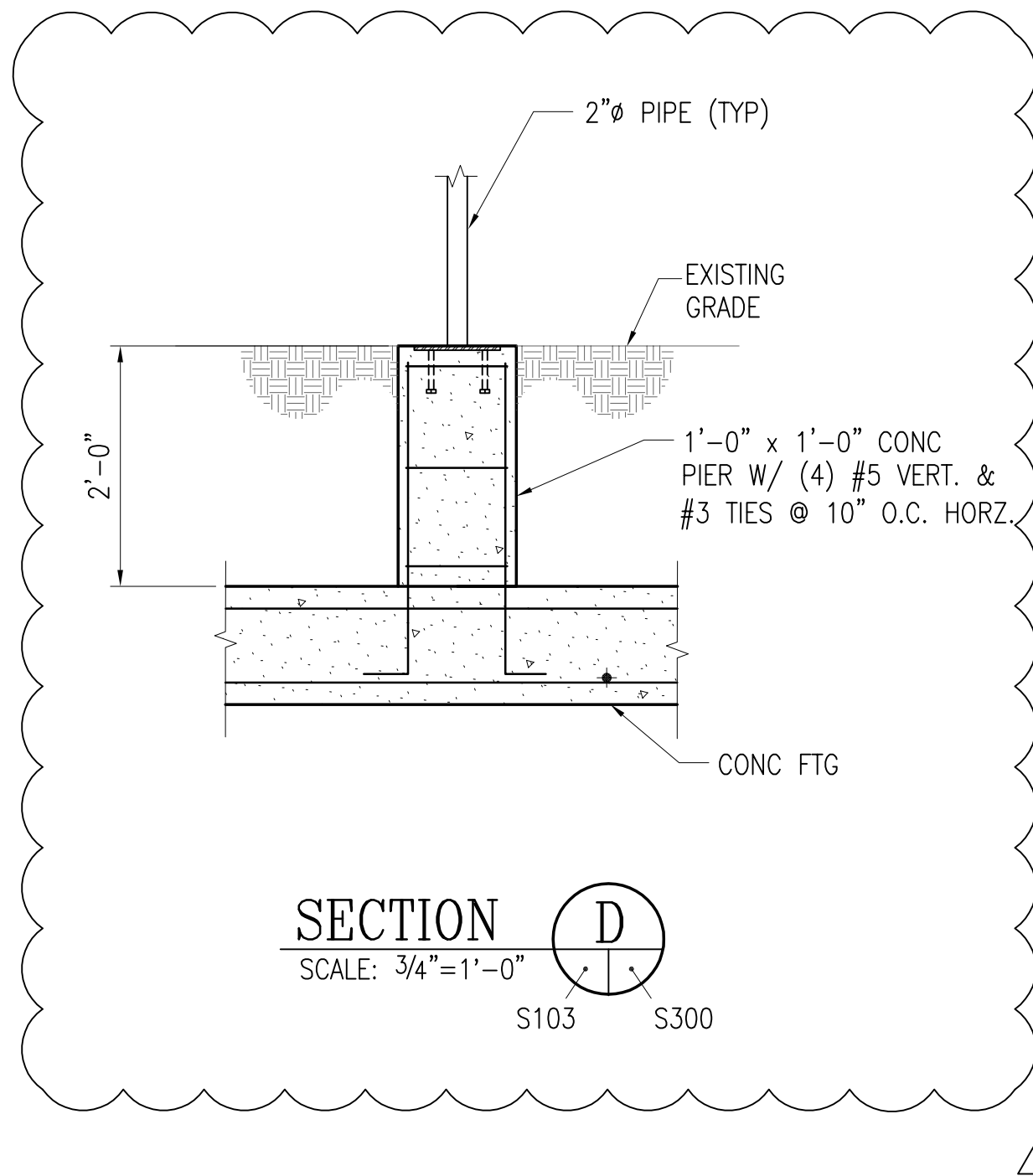
DATE FEBRUARY 3, 2006
H&A PROJECT NO. 3979.31
CLIENT PROJECT NO. -
SCALE 1/4"=1'-0"
DRAWN BY RSR
CHECKED BY DCC
APPROVED BY EJA
SHEET NUMBER S103



- NOTES:
- SEE SECTION A/S300 FOR REINF.



- NOTES:
- FOR ALUMINUM PLANKING CONNECTION TO SUPPORT ANGLE, SEE TYPICAL PLANKING CONNECTION DETAIL ON S401.
 - TOP OF EXTENDED PLATFORM PLANKING TO MATCH TOP OF WALL AND TOP OF NEW PLATFORM.
 - ALL CMU WITH EMBEDDED ANCHORS TO BE GROUTED SOLID.

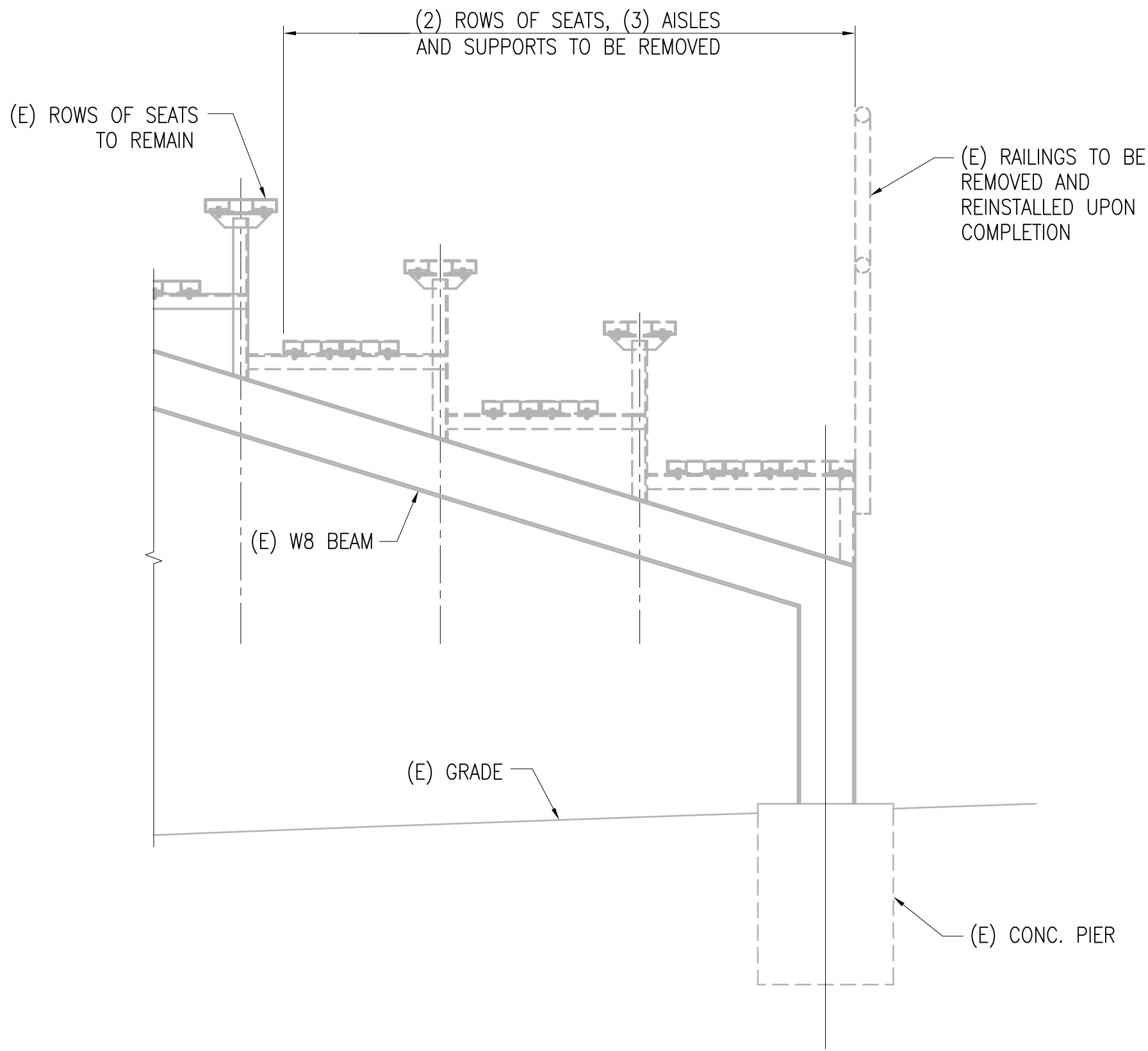


REV	DATE	DESCRIPTION
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2	03-08-06	PER COUNTY COMMENTS

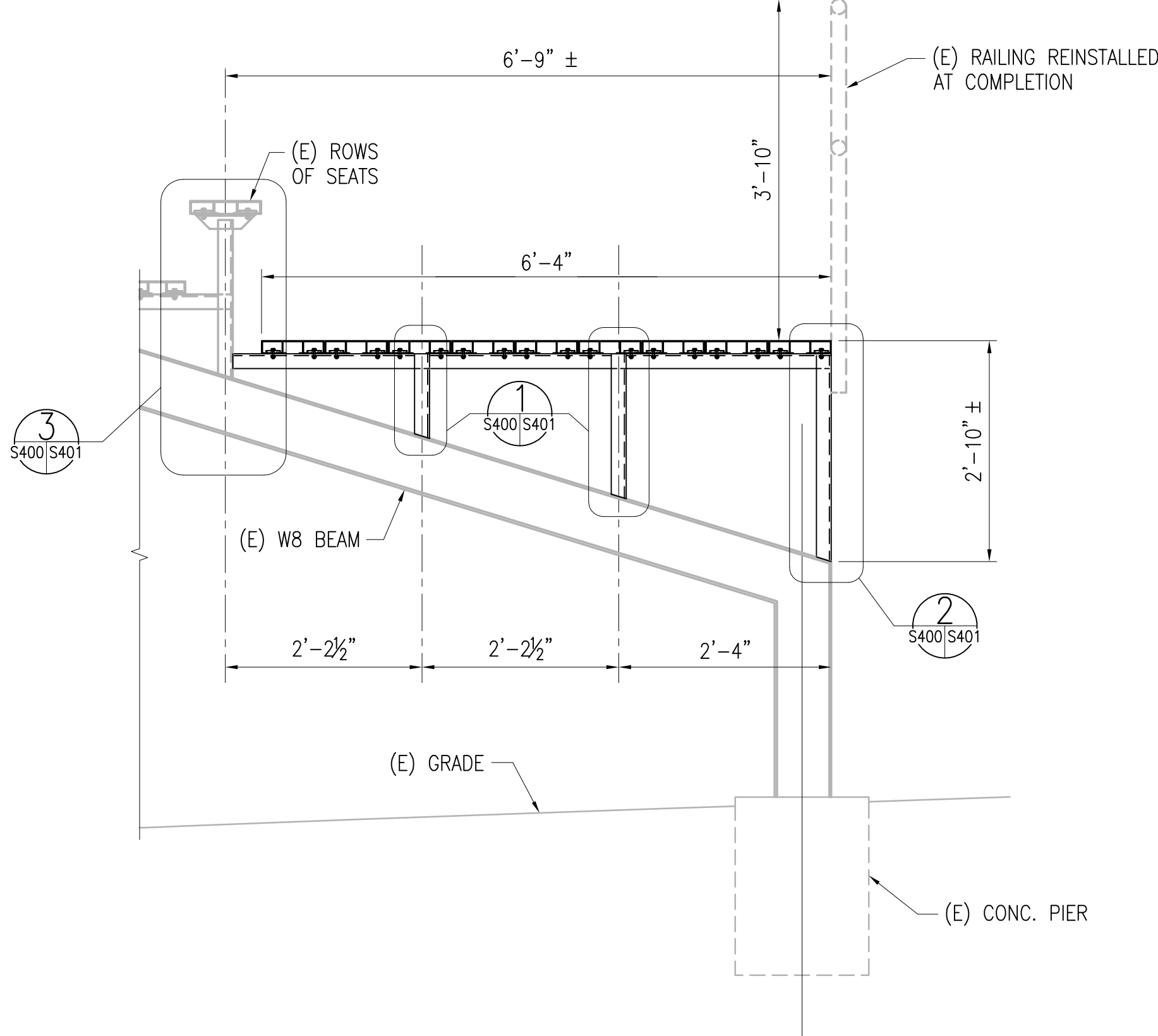
PROJECT TITLE
**Manchester Middle School
Bleacher Repair**

SHEET TITLE
SECTIONS AND DETAILS

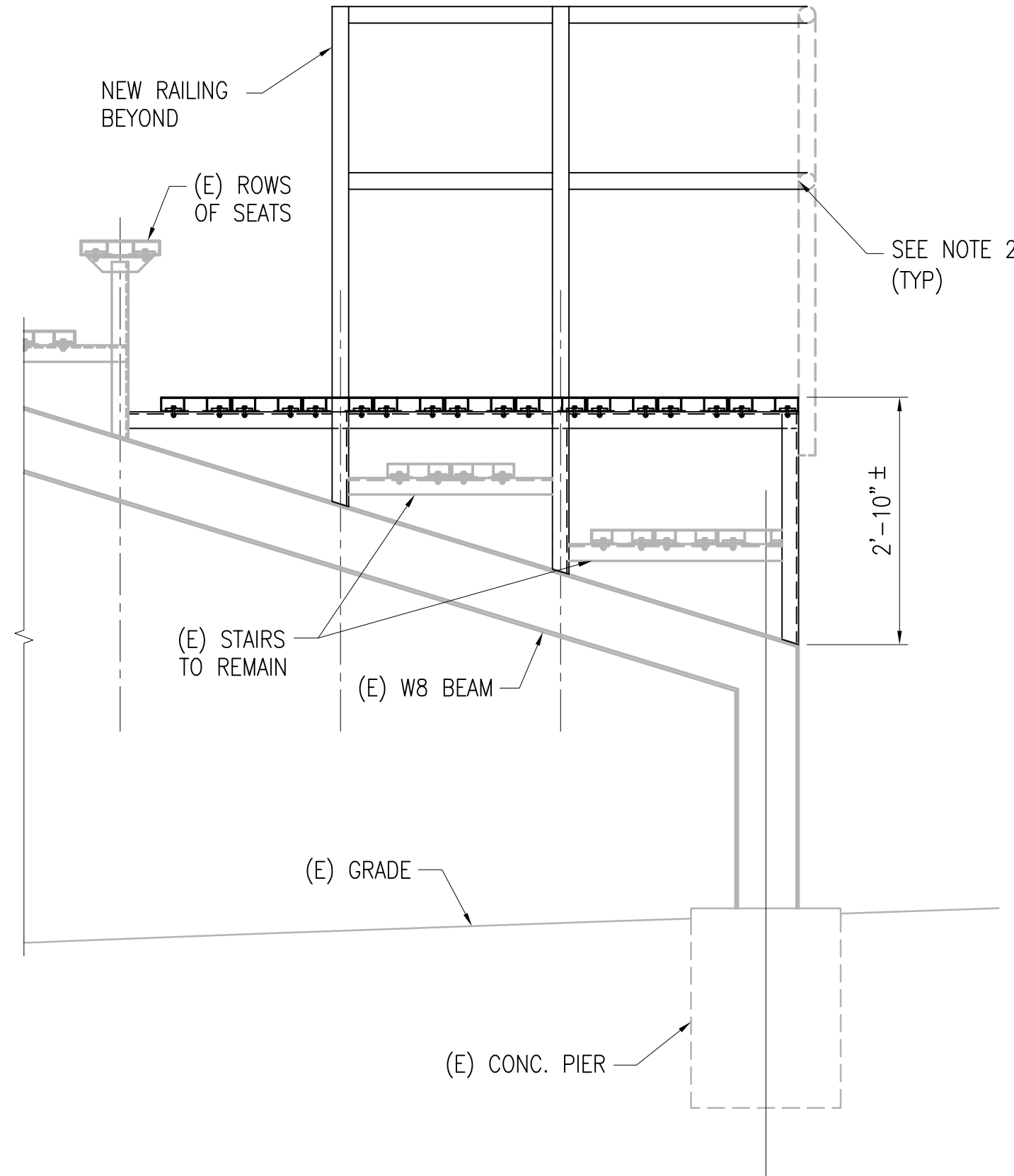
DATE	FEBRUARY 3, 2006
H&A PROJECT NO.	3979.31
CLIENT PROJECT NO.	-
SCALE	3/4"=1'-0"
DRAWN BY	RSR
CHECKED BY	DCC
APPROVED BY	EJA
SHEET NUMBER	S300



SECTION A
SCALE: 3/4"=1'-0"
S101 S400

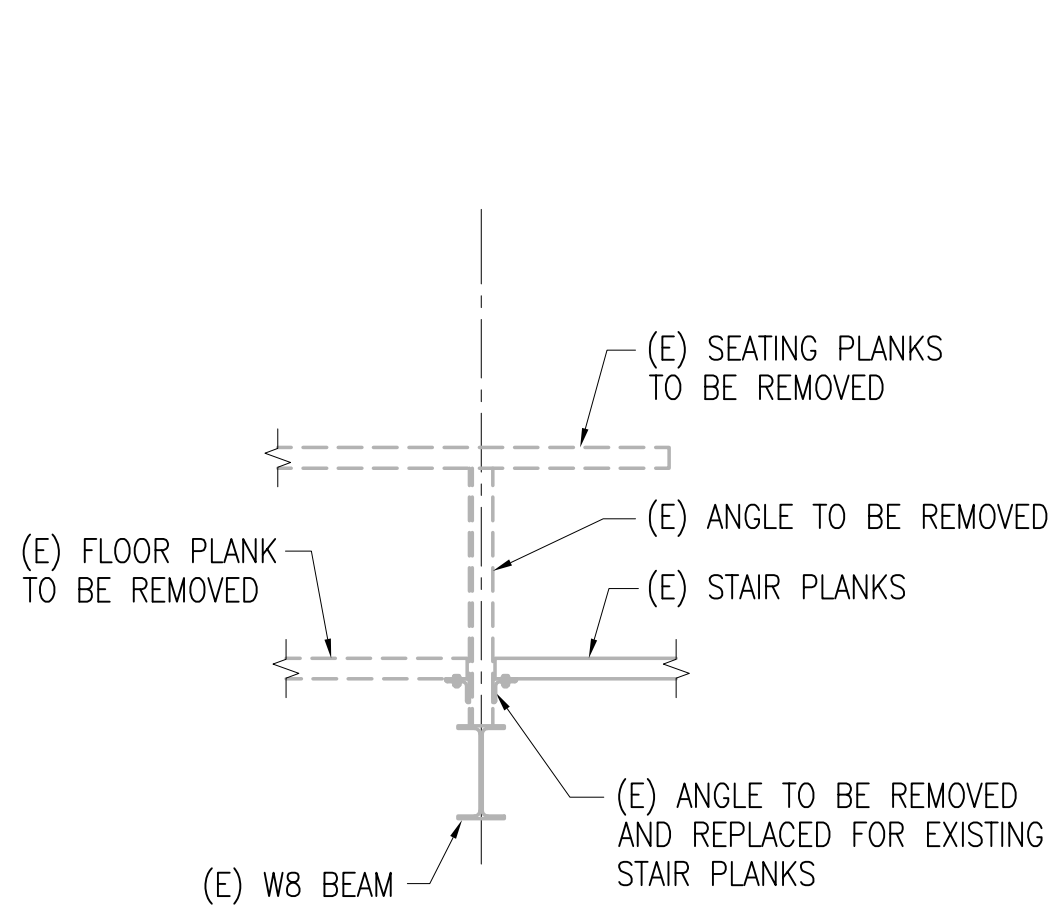


SECTION B
SCALE: 3/4"=1'-0"
S102 S400

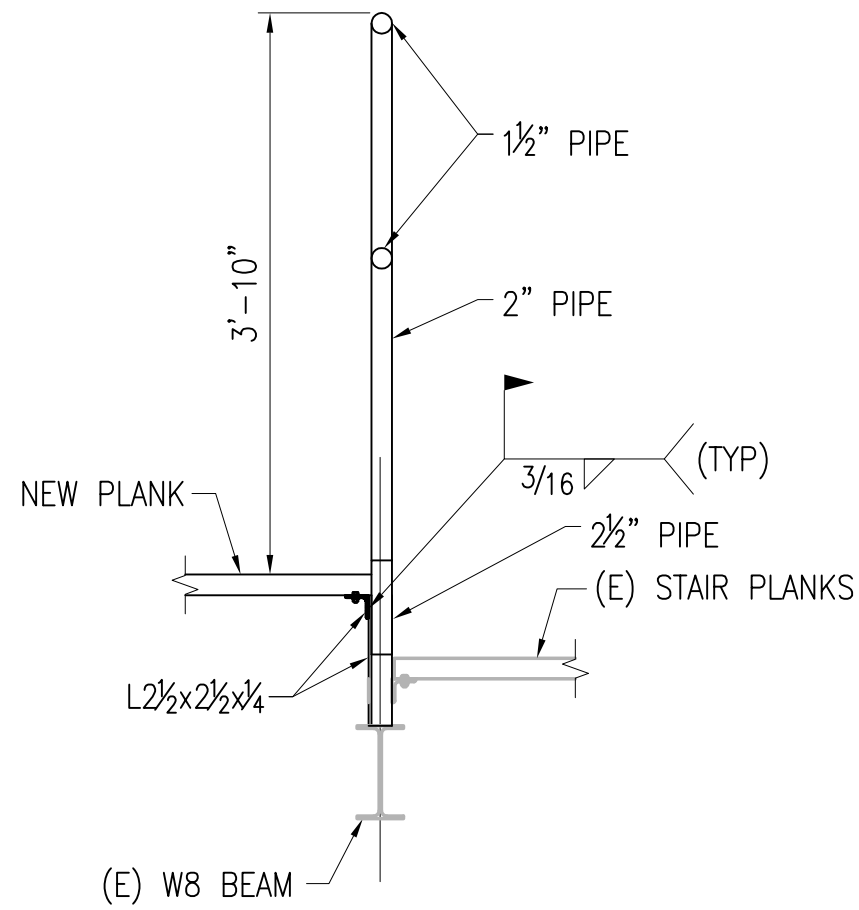


SECTION C
SCALE: 3/4"=1'-0"
S102 S400

- NOTES:
- NEW RAILING TO MATCH EXISTING.
 - WELD NEW HORIZONTAL RAILS TO EXISTING VERTICAL RAILING.



SECTION D
SCALE: 3/4"=1'-0"
S101 S400

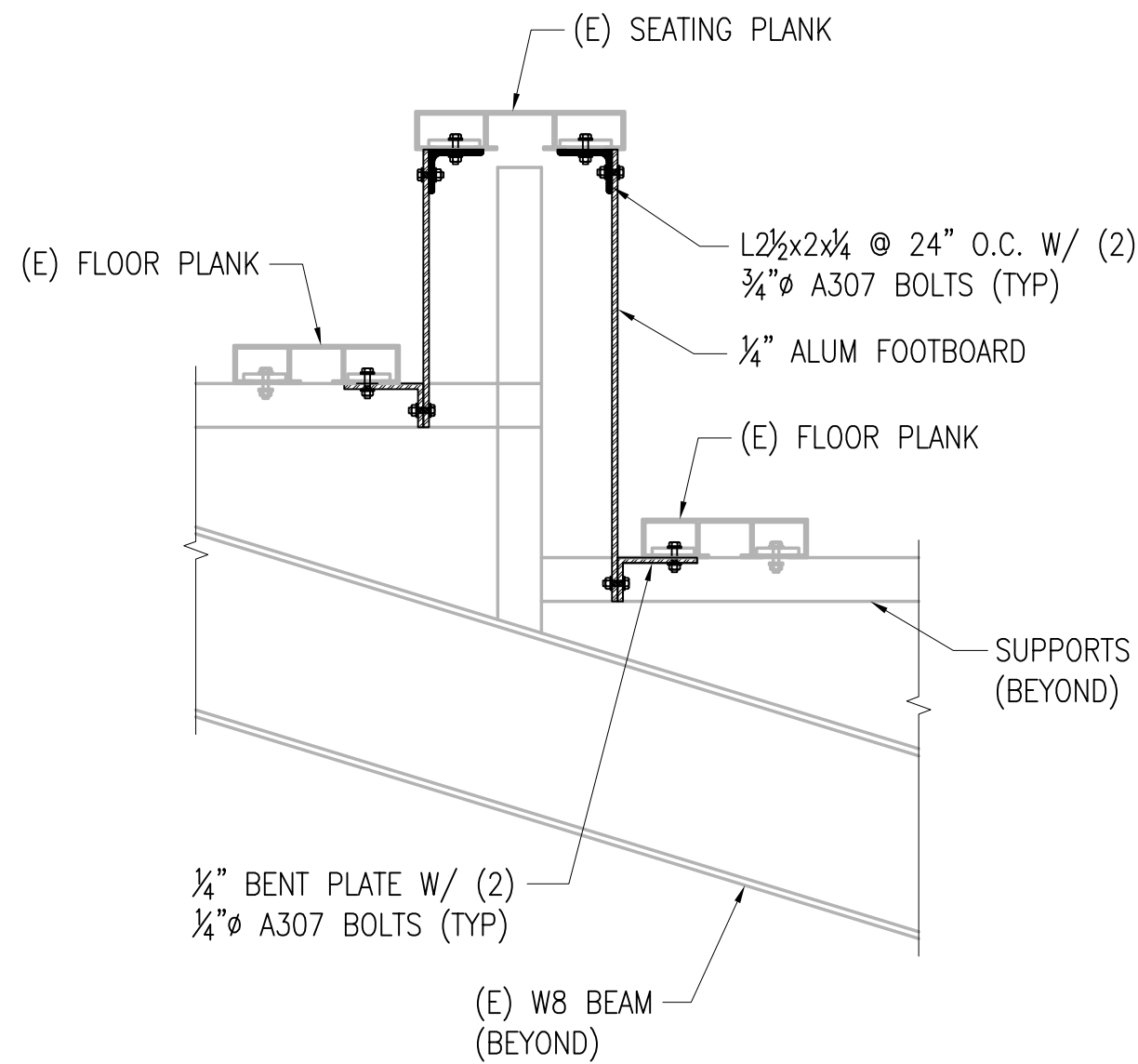
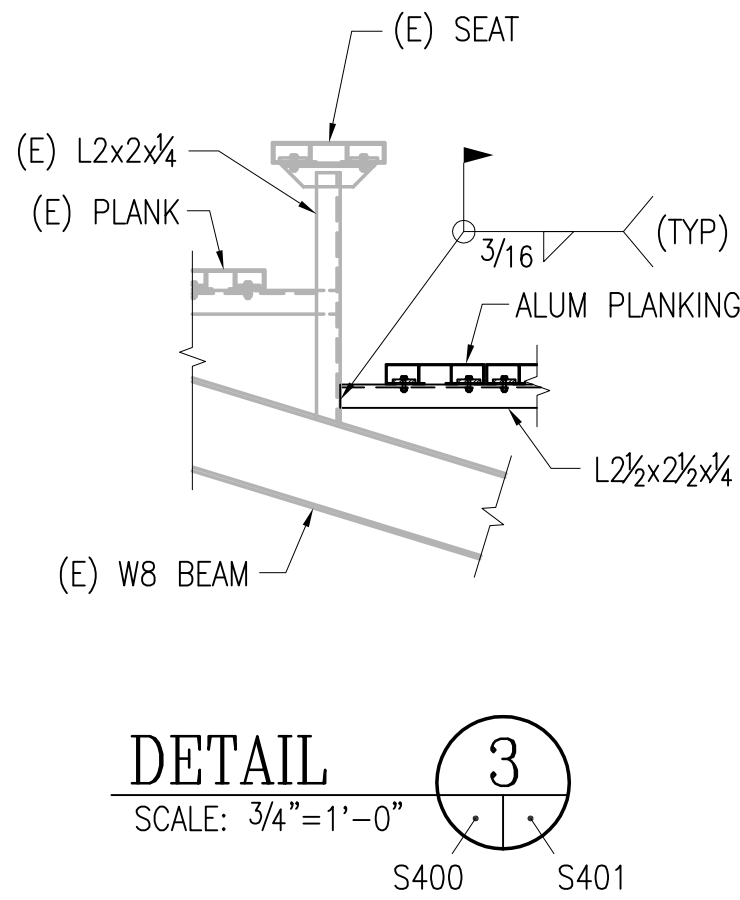
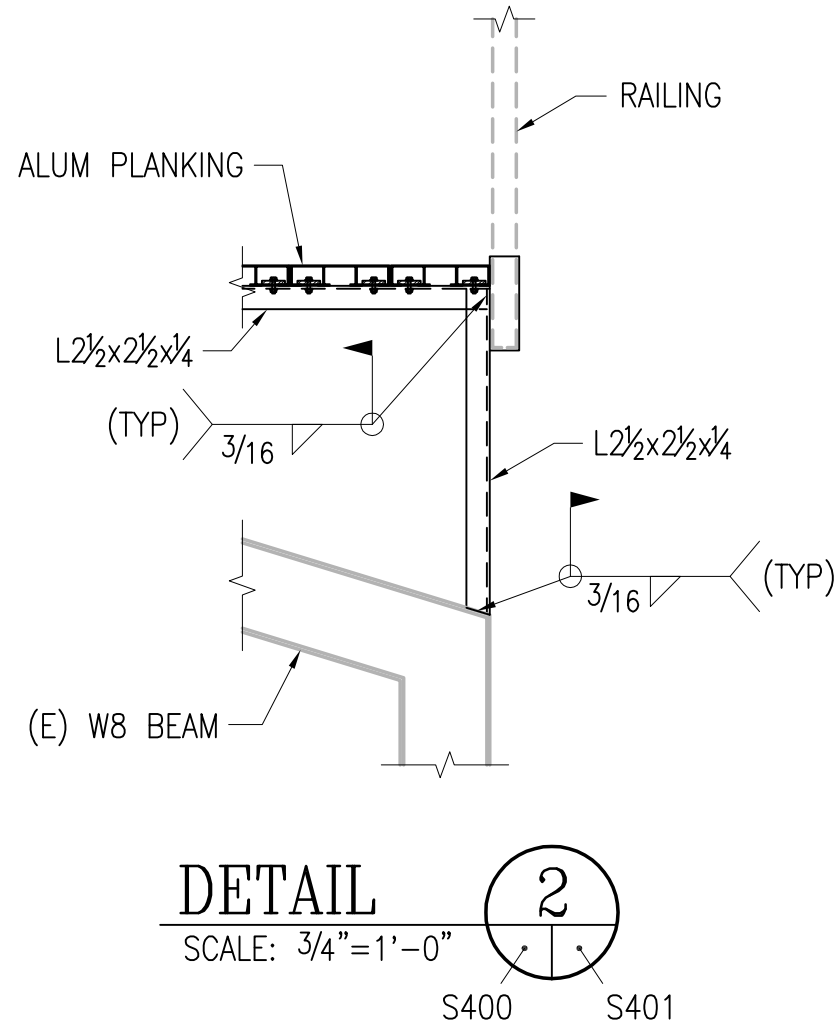
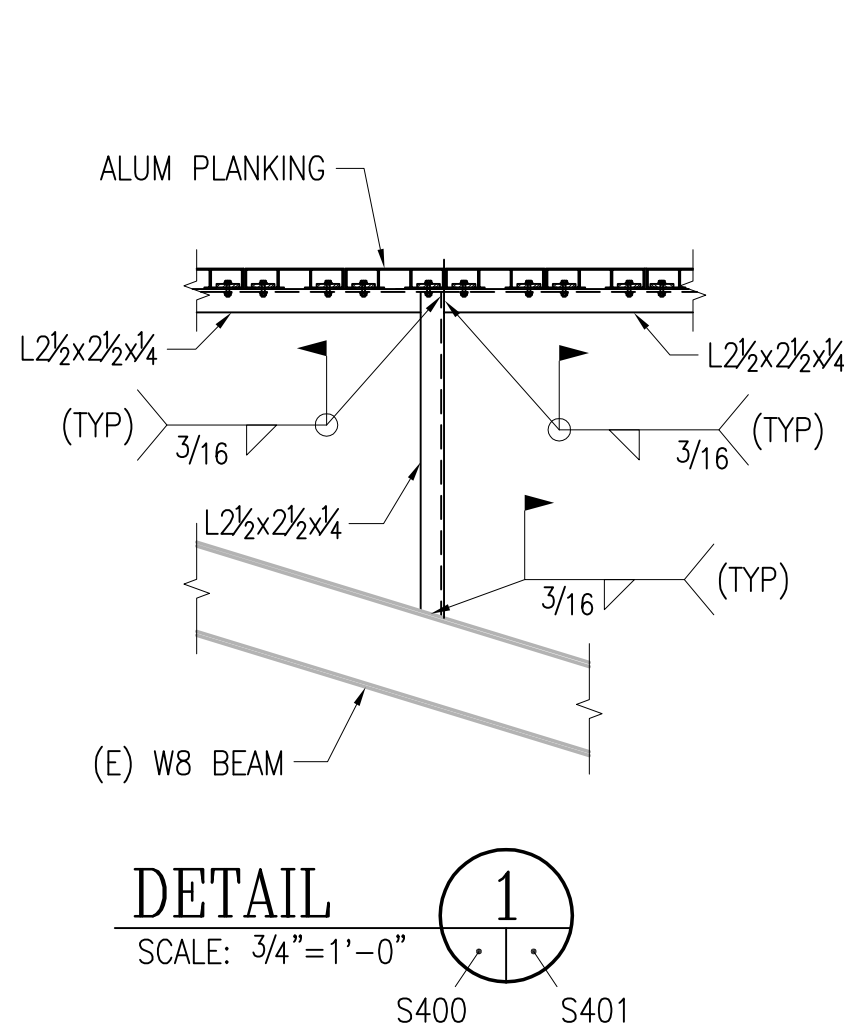


SECTION E
SCALE: 3/4"=1'-0"
S102 S400

REV	DATE	DESCRIPTION
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2	03-08-06	PER COUNTY COMMENTS

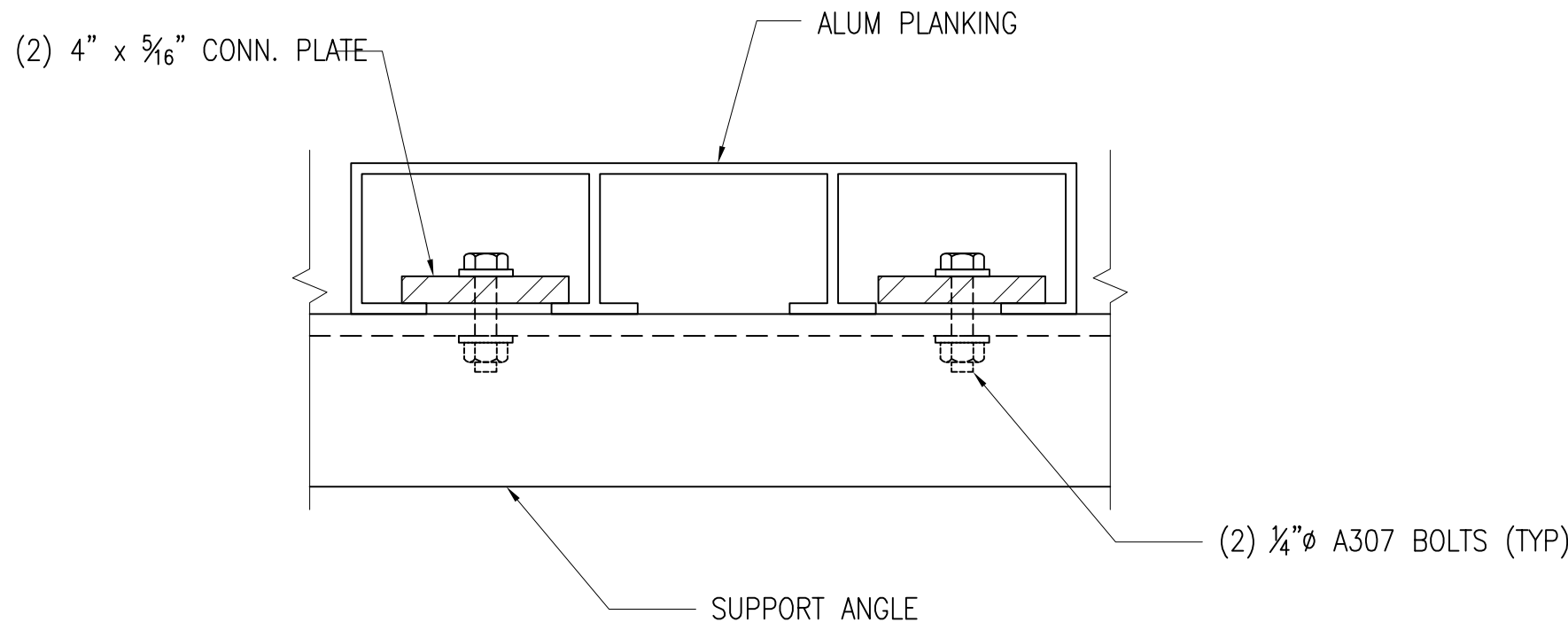
PROJECT TITLE	MANCHESTER MIDDLE SCHOOL BLEACHER REPAIR
SHEET TITLE	SECTIONS AND DETAILS

DATE	FEBRUARY 3, 2006
H&A PROJECT NO.	3979.31
CLIENT PROJECT NO.	-
SCALE	3/4"=1'-0"
DRAWN BY	RSR
CHECKED BY	DCC
APPROVED BY	EJA
SHEET NUMBER	S400



NOTES:

1. FOOTBOARDS TO BE INSTALLED BETWEEN GAPS IN EGRESS STAIRS SIMILAR.
2. PROVIDE ISOLATION BARRIER BETWEEN ALUMINUM AND STRUCTURAL STEEL.



NOTES:

1. CONNECTION TYPICAL AT ALL SUPPORTS ANGLES.
2. PROVIDE ISOLATION BARRIER BETWEEN ALUMINUM AND STRUCTURAL STEEL.

REV	DATE	DESCRIPTION
1	02-24-06	PER COUNTY COMMENTS
2	03-08-06	PER COUNTY COMMENTS

PROJECT TITLE Manchester Middle School Bleacher Repair	SHEET TITLE SECTIONS AND DETAILS
--	--

DATE FEBRUARY 3, 2006
H&A PROJECT NO. 3979.31
CLIENT PROJECT NO. -
SCALE 3/4"=1'-0"
DRAWN BY RSR
CHECKED BY DCC
APPROVED BY EJA
SHEET NUMBER S401

MIDLOTHIAN MIDDLE SCHOOL BLEACHER REPAIR

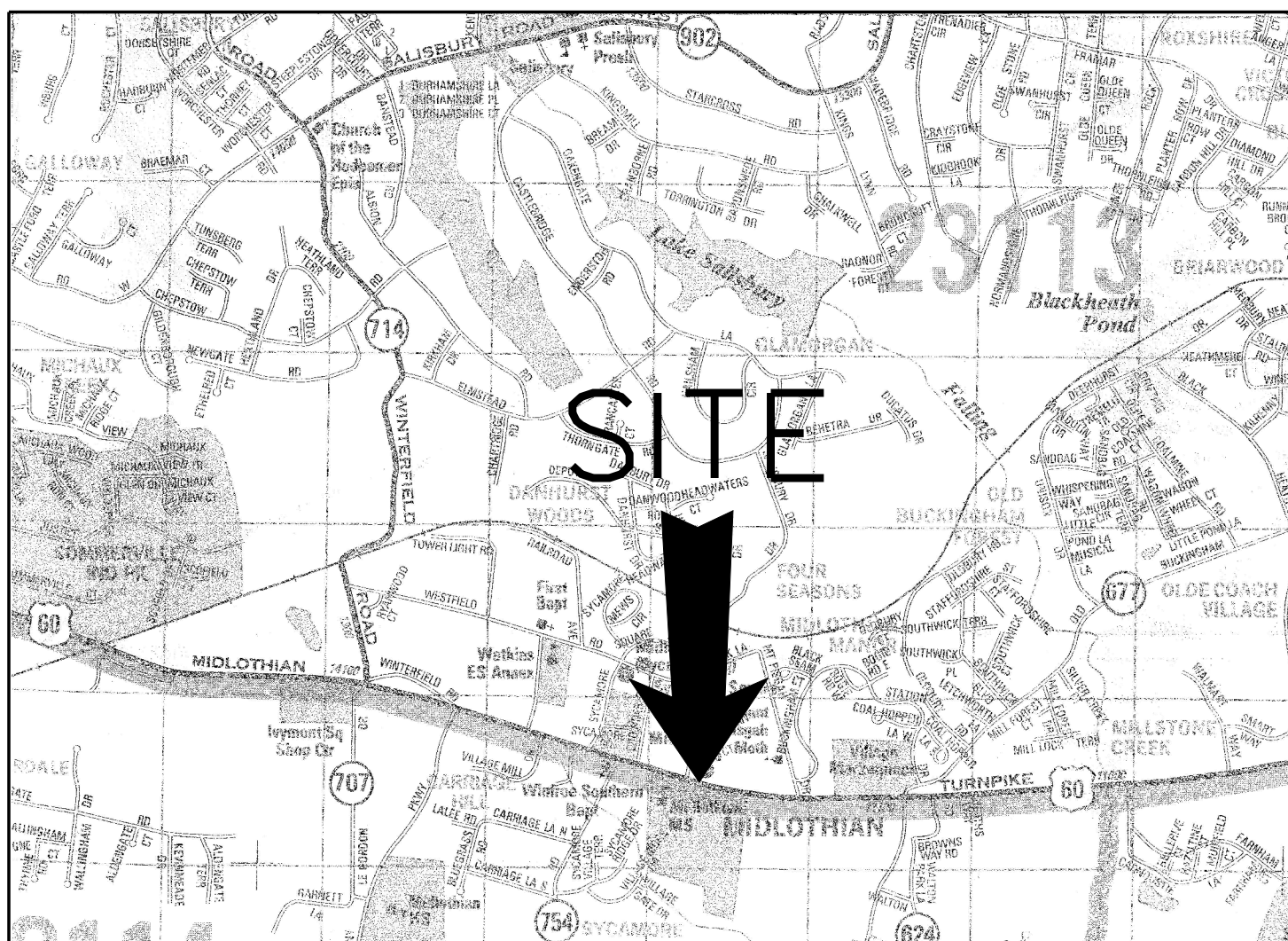


CHESTERFIELD COUNTY, VIRGINIA PREPARED BY:



Hankins and Anderson
Consulting Engineers

4880 Sadler Road Glen Allen, Virginia 23060
(804) 285 4171 (804) 217 8520 Fax
www.haengineers.com



MIDLOTHIAN MIDDLE SCHOOL VICINITY MAP

SCALE 1"=2000'
GRAPHIC SCALE: 1"=2000'
0 2000 4000

GENERAL NOTES

- OWNER/DEVELOPER: CHESTERFIELD COUNTY
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 40
CHESTERFIELD, VA 23832
STUART W. CONNOCK, JR.
(804) 751-4484 FAX (804) 751-4486
- CONSULTING CIVIL ENGINEER: HANKINS & ANDERSON, INC.
4880 SADLER ROAD
SUITE 300
GLEN ALLEN, VIRGINIA 23060
WILLIAM C. WHEELER
(804) 285-4171, FAX (804) 217-8520
- SITE ADDRESS: MIDLOTHIAN MIDDLE SCHOOL
13501 MIDLOTHIAN TURNPIKE,
MIDLOTHIAN, VA. 23113
- CONTOUR INTERVAL: FIVE FOOT
- DIMENSIONS AND RADII ARE TO EDGE OF PAVEMENT, WHERE APPLICABLE UNLESS INDICATED OTHERWISE.
- THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS FOR THIS PROJECT FROM THE COMMONWEALTH OF VIRGINIA AND CHESTERFIELD COUNTY, WITH THE EXCEPTION OF THE LAND DISTURBANCE PERMIT.
- ALL PERMITS, WHICH MUST BE OBTAINED SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
- THE CONTRACTOR SHALL NOTIFY THE COUNTY ENGINEER 24 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- LOCATION OF EXISTING SEWER, WATER OR GAS LINES, CONDUITS OR OTHER STRUCTURES ACROSS, UNDERNEATH, OR OTHERWISE ALONG THE LINE OF PROPOSED WORK ARE NOT NECESSARILY SHOWN ON THE PLANS, AND IF SHOWN ARE ONLY APPROXIMATELY CORRECT. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS, IF THERE APPEARS TO BE A CONFLICT, OR UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THE PLANS. FOR ASSISTANCE IN LOCATING EXISTING UTILITIES CALL "MISS UTILITY", 1-800-552-7001.
- ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION EXCEPT WHERE CHESTERFIELD COUNTY STANDARDS ARE APPLICABLE.
- THE OWNER SHALL BE RESPONSIBLE FOR THE VERIFICATION OF 95% COMPACTION OF THE SUBGRADE BY AN INDEPENDENT SOILS TESTING LABORATORY.
- THE CONTRACTOR SHALL REWORK (DRY, SCARIFY, ETC.) ALL MATERIAL NOT SUITABLE FOR SUBGRADE IN ITS PRESENT STATE. IF THE MATERIAL, AFTER REWORKING, REMAINS UNSUITABLE, THEN THE CONTRACTOR SHALL UNDERCUT THIS MATERIAL AND REPLACE WITH APPROVED MATERIAL. ALL SUBGRADES SHALL BE PROOFROLLED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK PRIOR TO PLACING CRUSHER RUN OR PAVEMENT. ANY SOFT MATERIAL SHALL SHALL BE REWORKED OR REPLACED.
- DAMAGE TO UTILITIES (INCLUDING UNDERGROUND) OR PROPERTY OF OTHERS BY CONTRACTOR DURING CONSTRUCTION SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS BY CONTRACTOR AT NO COST TO OWNER.
- EXISTING PAVEMENT AND OTHER SURFACES DISTURBED BY CONTRACTOR (WHICH ARE NOT INTENDED TO BE REMOVED) SHALL BE REPAIRED TO LIKE-NEW CONDITION OR REPLACED.
- THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL DITCHES, PIPES, AND OTHER DRAINAGE STRUCTURES FREE FROM OBSTRUCTION UNTIL ALL WORK IS ACCEPTED BY THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED BY FAILURE TO MAINTAIN DRAINAGE STRUCTURES IN OPERABLE CONDITION.
- ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE UNLESS OTHERWISE SPECIFIED.
- THE EXISTING TOPOGRAPHICAL INFORMATION IS TAKEN FROM CHESTERFIELD COUNTY GIS AND MAY NOT SHOW ALL CONDITIONS OF THE SITE. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO ENSURE ALL ASPECTS OF THE CONSTRUCTION SCOPE ARE INCLUDED IN THE BID. COSTS TO THE OWNER FOR ADDITIONAL ITEMS THAT COULD HAVE BEEN IDENTIFIED BY A SITE VISIT WILL NOT BE APPROVED.

INDEX OF DRAWINGS

SHEET NO	DESCRIPTION
T1	TITLE SHEET
S100	GENERAL STRUCTURAL NOTES AND ABBREVIATIONS
S104	DEMOLITION AND NEW ADA PLATFORM PLAN
S402	SECTIONS AND DETAILS



Hankins and Anderson
Consulting Engineers
4880 Sadler Road Glen Allen, Virginia 23060
(804) 285 4171 (804) 217 8520 Fax
www.haengineers.com

REV	DATE	DESCRIPTION
1	02-24-06	PER COUNTY COMMENTS

PROJECT TITLE Midlothian Middle School Bleacher Repair	SHEET TITLE TITLE SHEET
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DATE FEBRUARY 3, 2006
H&A PROJECT NO. 3979.31
CLIENT PROJECT NO. -
SCALE As Noted
DRAWN BY JRA
CHECKED BY WCW
APPROVED BY BAL
SHEET NUMBER T1

GENERAL STRUCTURAL NOTES

DESIGN LOADS

- | | |
|--------------------------------------|---------|
| 1. GRAVITY - SUPERIMPOSED LIVE LOADS | |
| BLEACHER SEATING | 100 PSF |
| EGRESS STAIRS | 100 PSF |





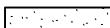

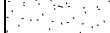

GENERAL

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE (IBC 2000 AS AMENDED) AND ALL APPLICABLE CODES REGULATIONS AND ORDINANCES OF THE LOCAL JURISDICTION.
2. THE CONTRACTOR SHALL VERIFY ALL FIELD MEASUREMENTS, EXISTING DIMENSIONS, ELEVATIONS, AND THE SHAPES AND SIZES OF EXISTING STRUCTURAL MEMBERS SHOWN AND NOT SHOWN ON THE CONTRACT DRAWINGS PRIOR TO BEGINNING WORK. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ALL DISCREPANCIES THAT WOULD RESULT IN REVISIONS TO THE CONTRACT DRAWINGS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ERECTION OF ALL TEMPORARY BRACING, FORMWORK, SHEETING AND SHORING NECESSARY TO PERFORM THE WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR SAFETY PRECAUTIONS AND PROGRAMS AS THEY RELATE TO THE WORK OF THIS PROJECT.
5. THE CONTRACTOR SHALL SUBMIT THE REQUIRED SHOP DRAWINGS FOR REVIEW PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND ACCEPT FULL RESPONSIBILITY FOR DIMENSIONAL CORRECTNESS. UNDER NO CIRCUMSTANCES SHALL REPRODUCTIONS OF CONTRACT DRAWINGS BE USED AS SHOP DRAWINGS WITHOUT PRIOR APPROVAL OF THE ENGINEER.

DEMOLITION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR SAFETY PRECAUTIONS AS THEY RELATE TO THIS WORK.
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS AND SHAPES AND SIZES OF EXISTING STRUCTURAL MEMBERS INDICATED TO BE REMOVED. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ALL DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ERECTION OF ALL TEMPORARY BRACING AND SHORING NECESSARY TO PREVENT MOVEMENT, SETTLEMENT OR COLLAPSE OF STRUCTURE OR ELEMENT TO BE DEMOLISHED AND ADJACENT STRUCTURE TO REMAIN.
4. THE CONTRACTOR SHALL PROTECT STRUCTURAL ELEMENTS AND ADJACENT FINISHES TO REMAIN FROM DAMAGE DURING THE DEMOLITION PROCESS.
5. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF THE SAFETY OF THE STRUCTURE APPEARS TO BE ENDANGERED. IN SUCH CASES, THE CONTRACTOR SHALL TAKE PRECAUTIONS TO TEMPORARILY SUPPORT THE STRUCTURE UNTIL A DETERMINATION IS MADE FOR CONTINUING THE DEMOLITION OPERATION.
6. LOCATE DEMOLITION EQUIPMENT AND PROMPTLY REMOVE STRUCTURAL DEBRIS TO AVOID IMPOSING EXCESSIVE LOADS ON SUPPORTING STRUCTURE.

HATCH PATTERN LEGEND

	CONCRETE (PLAN)		POROUS FILL
	CONCRETE (SECTION)		GROUT
	CMU (PLAN & SECTION)		STEEL
	VENEER (PLAN & SECTION)		EARTH

FOUNDATION

1. FOUNDATIONS FOR THIS STRUCTURE ARE SPREAD FOOTINGS BEARING ON EITHER FIRM VIRGIN SOIL OR COMPACTED STRUCTURAL FILL. IN THE ABSENCE OF A GEOTECHNICAL ENGINEERING REPORT, AN ALLOWABLE BEARING CAPACITY OF 1500 PSF HAS BEEN ASSUMED. A GEOTECHNICAL ENGINEER SHALL VERIFY, PRIOR TO POURING, THAT THE SOIL IS CAPABLE OF SUSTAINING SUCH A LOAD.
2. ALL EXTERIOR SPREAD FOOTINGS SHALL BEAR A MINIMUM OF 2'-0" BELOW FINISH GRADE. THE CONTRACTOR SHALL PROTECT ALL FOOTINGS FROM FROST DURING CONSTRUCTION.
3. ALL WALLS SUBJECT TO LATERAL LOAD DUE TO UNBALANCED FILL SHALL BE BRACED PLUMB UNTIL BACKFILL HAS BEEN PLACED AND COMPACTED AND SHALL REMAIN BRACED UNTIL THE PERMANENT STRUCTURE ABOVE IS IN PLACE AND CAPABLE OF RESISTING ALL LOADS.

CAST-IN-PLACE CONCRETE

1. ALL CAST IN PLACE CONCRETE SHALL BE NORMAL WEIGHT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS UNLESS OTHERWISE NOTED.
2. ALL REINFORCING STEEL SHALL BE ASTM A615, GRADE 60.
3. RAMP SLAB SHALL BE REINFORCED WITH 6x6 - W2.1XW2.1 WELDED WIRE FABRIC LOCATED 1½" FROM THE TOP OF SLAB UNLESS OTHERWISE NOTED.
4. ALL WELDED WIRE FABRIC SHALL BE ASTM A185, IN FLAT SHEETS, LAPPED A MINIMUM OF ONE FULL WIRE SPACE PLUS 2" WHEN SPLICED.
5. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 301-96 "SPECIFICATIONS FOR STRUCTURAL CONCRETE", ACI 318-99 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND THE PROJECT SPECIFICATIONS UNLESS OTHERWISE NOTED OR DETAILED ON THE CONTRACT DRAWINGS.
6. DETAILING OF ALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI DETAILING MANUAL - ACI SP-66(94).
7. ALL REINFORCING STEEL SHALL BE HELD SECURELY IN PLACE TO PREVENT DISLOCATION DURING CONCRETE PLACEMENT.

MASONRY

1. ALL CONCRETE MASONRY WORK SHALL BE IN ACCORDANCE WITH ACI 530-99 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" AND ACI 530.1-99 "SPECIFICATIONS FOR MASONRY STRUCTURES". MINIMUM DESIGN COMPRESSIVE STRENGTH (F_m) OF MASONRY SHALL BE 2150 PSI.

MATERIAL SPECIFICATIONS:
HOLLOW CONCRETE MASONRY UNITS ASTM C90, NORMAL WEIGHT
SOLID CONCRETE MASONRY UNITS ASTM C90, NORMAL WEIGHT
MORTAR ASTM C270, TYPE M OR S
GROUT ASTM C476.
2. ALL ENGINEERED CONCRETE MASONRY SHALL BE INSPECTED BY A QUALIFIED MASONRY INSPECTOR.
3. ALL REINFORCING BARS IN MASONRY SHALL BE FULLY GROUTED FOR THEIR ENTIRE LENGTH.
4. ALL MASONRY BELOW GRADE SHALL BE SOLID OR GROUT FILLED.
5. ALL REINFORCING BARS IN MASONRY SHALL BE LAP-SPLICED 48 BAR DIAMETERS

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WORK SHALL BE IN ACCORDANCE WITH THE AISC "MANUAL OF STEEL CONSTRUCTION – ALLOWABLE STRESS DESIGN", 9TH EDITION, WITH SUPPLEMENTS.

MATERIAL SPECIFICATIONS:
ALL STEEL SHAPES,
PLATES AND BARS
PIPE
ANCHOR BOLTS

ASTM A36
ASTM A53, TYPE E, GRADE B
ASTM A307
2. ALL STRUCTURAL STEEL, BOLTS AND NUTS SHALL BE GALVANIZED, G60 MIN..
3. ALL ANCHORAGES TO SOLID OR GROUT FILLED CMU SHALL BE MADE USING A TWO-PART VINYLESTER BLEND RESIN ADHESIVE AND GALVANIZED ASTM A307 THREADED ROD INSTALLED IN A PREDRILLED HOLE PER THE MANUFACTURER'S INSTRUCTIONS. THE MINIMUM EMBEDMENT AND ALLOWABLE SHEAR AND TENSION CAPACITIES SHALL BE BASED ON THE HLTI HIT HY 150 SYSTEM OR OTHER APPROVED SYSTEM WITH EQUIVALENT OR GREATER CAPACITIES INCLUDING REQUIRED REDUCTIONS DUE TO SPACING AND EDGE DISTANCES.
4. ALL SHOP AND FIELD WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS IN ACCORDANCE WITH AWS D1.1 USING E70XX ELECTRODES.

STRUCTURAL ABBREVIATIONS

Ø	AT	(N)	NEW
A.B.	ANCHOR BOLT	N. WT.	NORMAL WEIGHT
ACI	AMERICAN CONCRETE INSTITUTE	N.T.S.	NOT TO SCALE
ADDL	ADDITIONAL	NOM	NOMINAL
ADH	ADHESIVE		
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	O.C.	ON CENTER
ALUM	ALUMINUM	O.D.	OUTSIDE DIAMETER
BLKG	BLOCKING	P.C.	PRECAST
BLW	BELOW	PL	PLATE
BM	BEAM	PROJ	PROJECT
BOT	BOTTOM		
		REINF	REINFORCING
C.C.	CENTER TO CENTER		
C.I.P.	CAST IN PLACE		
C.J.	CONTROL JOINT	S.O.G.	SLAB ON GRADE
CL	CENTER LINE	SECT	SECTION
CLR	CLEAR	SIM	SIMILAR
CMU	CONCRETE MASONRY UNIT	SL	SLOPE
CONC	CONCRETE	SPA	SPACE(S)(ING)
CONN	CONNECTION	SPEC	SPECIFICATION
CONST	CONSTRUCTION	STD	STANDARD
CONT	CONTINUOUS	STL	STEEL
CONTR	CONTRACTOR	STRUCT	STRUCTURE(AL)
COORD	COORDINATE	SUP	SUPPORT
CTR	CENTER		
		T&B	TOP AND BOTTOM
D	DEPTH	T.O.F.	TOP OF FOOTING
D.L.	DEAD LOAD	T.O.S.	TOP OF STEEL
DET	DETAIL	T.O.SL	TOP OF SLAB
DIA	DIAMETER	T.O.W.	TOP OF WALL
DIAG	DIAGONAL	THK	THICK(NESS)
DIM	DIMENSION	TYP	TYPICAL
DWG	DRAWING		
DWL	DOWEL	U.O.N.	UNLESS OTHERWISE NOTED
(E)	EXISTING	V.I.F.	VERIFY IN FIELD
E.F.	EACH FACE	VERT	VERTICAL
E.J.	EXPANSION JOINT		
E.O.S.	EDGE OF SLAB	W/	WITH
E.S.	EACH SIDE	WD	WOOD
E.W.	EACH WAY	W.W.F.	WELDED WIRE FABRIC
EA	EACH		
ELEV	ELEVATION		
EMBED	EMBEDMENT		
ENG	ENGINEER		
EQ	EQUAL		
EXIST	EXISTING		
FDN	FOUNDATION		
FRMG	FRAMING		
FTG	FOOTING		
G.C.	GENERAL CONTRACTOR		
GALV	GALVANIZED		
GEN	GENERAL		
GR	GRADE		
H.S.	HIGH STRENGTH		
HD	HEADED		
HGT	HEIGHT		
HK	HOOK		
HORZ	HORIZONTAL		
I.D.	INSIDE DIAMETER		
IBC	INTERNATIONAL BUILDING CODE		
JT	JOINT		
L.L.	LIVE LOAD		
LGMF	LIGHT GAGE METAL FRAMING		
LONG	LONGITUDINAL		
MAX	MAXIMUM		
MFR	MANUFACTURER		
MIN	MINIMUM		
MSNY	MASONRY		
MTL	METAL		



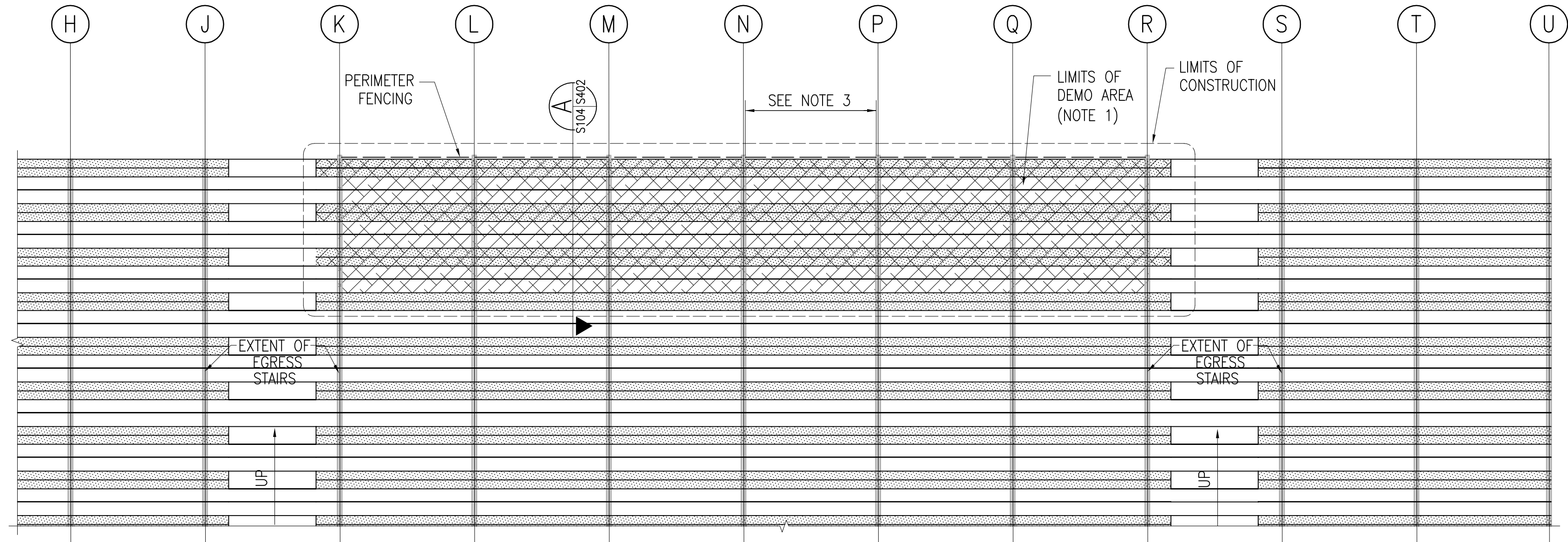
Hankins and Anderson
Consulting Engineers

4880 Sadler Road Glen Allen, Virginia 23060
(804) 285 4171 (804) 217 8520 Fax
www.haengineers.com

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PROJECT TITLE	Midlothian Middle School Bleacher Repair
SHEET TITLE	GENERAL STRUCTURAL NOTES & ABBREVIATIONS

DATE	FEBRUARY 3, 2006
H&A PROJECT NO.	3979.31
CLIENT PROJECT NO.	-
SCALE	NONE
DRAWN BY	RSR
CHECKED BY	DCC
APPROVED BY	EJA
SHEET NUMBER	S100

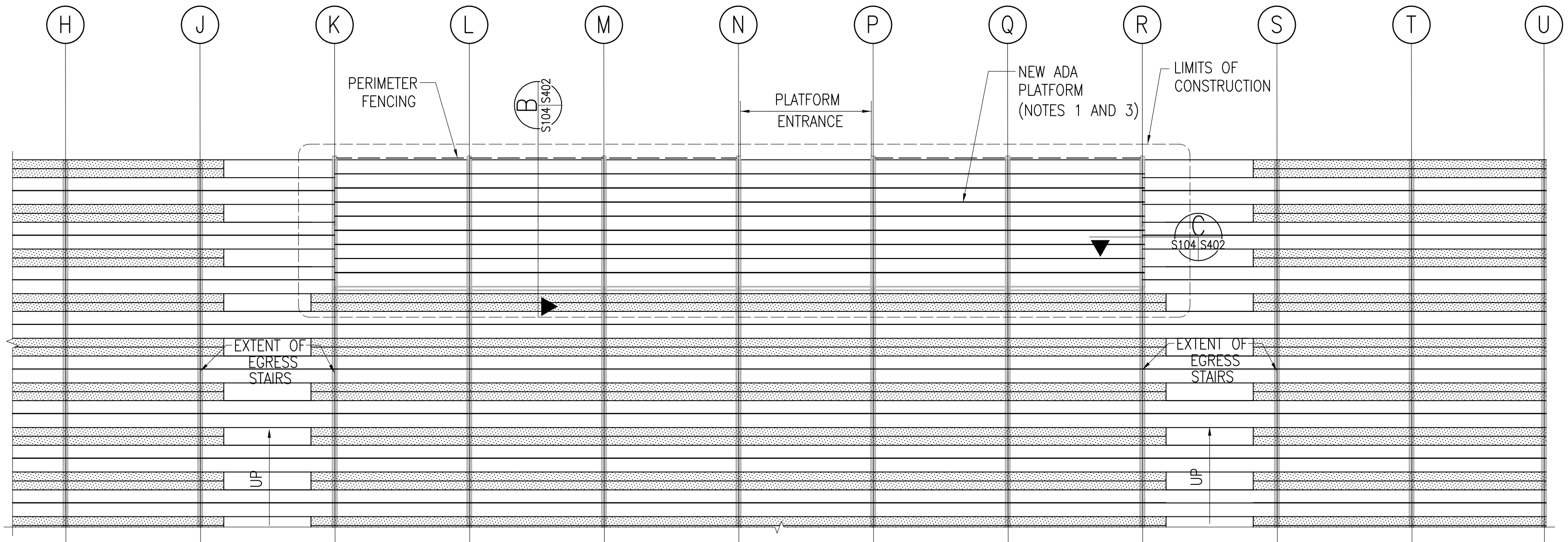


DEMOLITION PLAN

SCALE: 1/4"=1'-0"

NOTES:

1. REMOVE ALL ALUMINUM PLANKING AND SUPPORTING MEMBERS, EXCEPT W BEAMS, FOR THE FIRST THREE ROWS OF SEATS AND AISLES AS INDICATED.
2. EXISTING ALUMINUM PLANKING MAY BE REUSED FOR NEW PLATFORM.
3. REMOVE ONE BAY OF PERIMETER FENCING AS SHOWN TO PROVIDE ACCESS TO PLATFORM.
4. SEE DWG S100 FOR GENERAL STRUCTURAL NOTES AND ABBREVIATIONS.

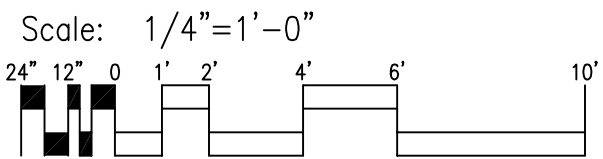


NEW ADA PLATFORM PLAN

SCALE: 1/4"=1'-0"

NOTES:

1. ELEVATION TOP OF PLANKING FOR PLATFORM TO MATCH EXISTING GRADE ELEVATION BEHIND BLEACHERS.
2. NEW ALUMINUM PLANKING TO MATCH EXISTING PLANKING STYLE.
3. ADA PLATFORM PROVIDES TEN WHEELCHAIR SPACES WITH SPACE FOR COMPANION SEATING NEXT TO WHEELCHAIR SPACE.
4. SEE DWG S100 FOR GENERAL STRUCTURAL NOTES AND ABBREVIATIONS.



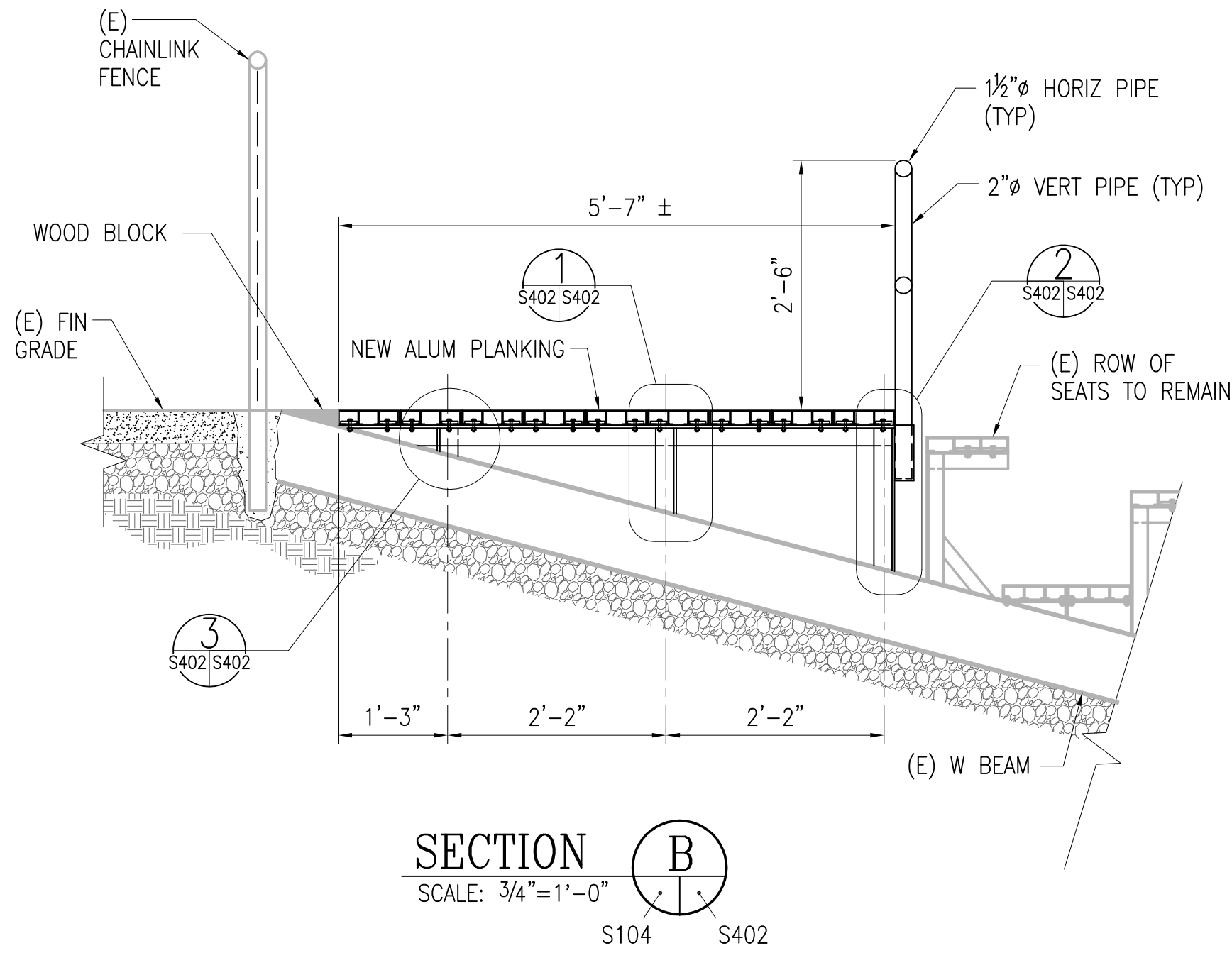
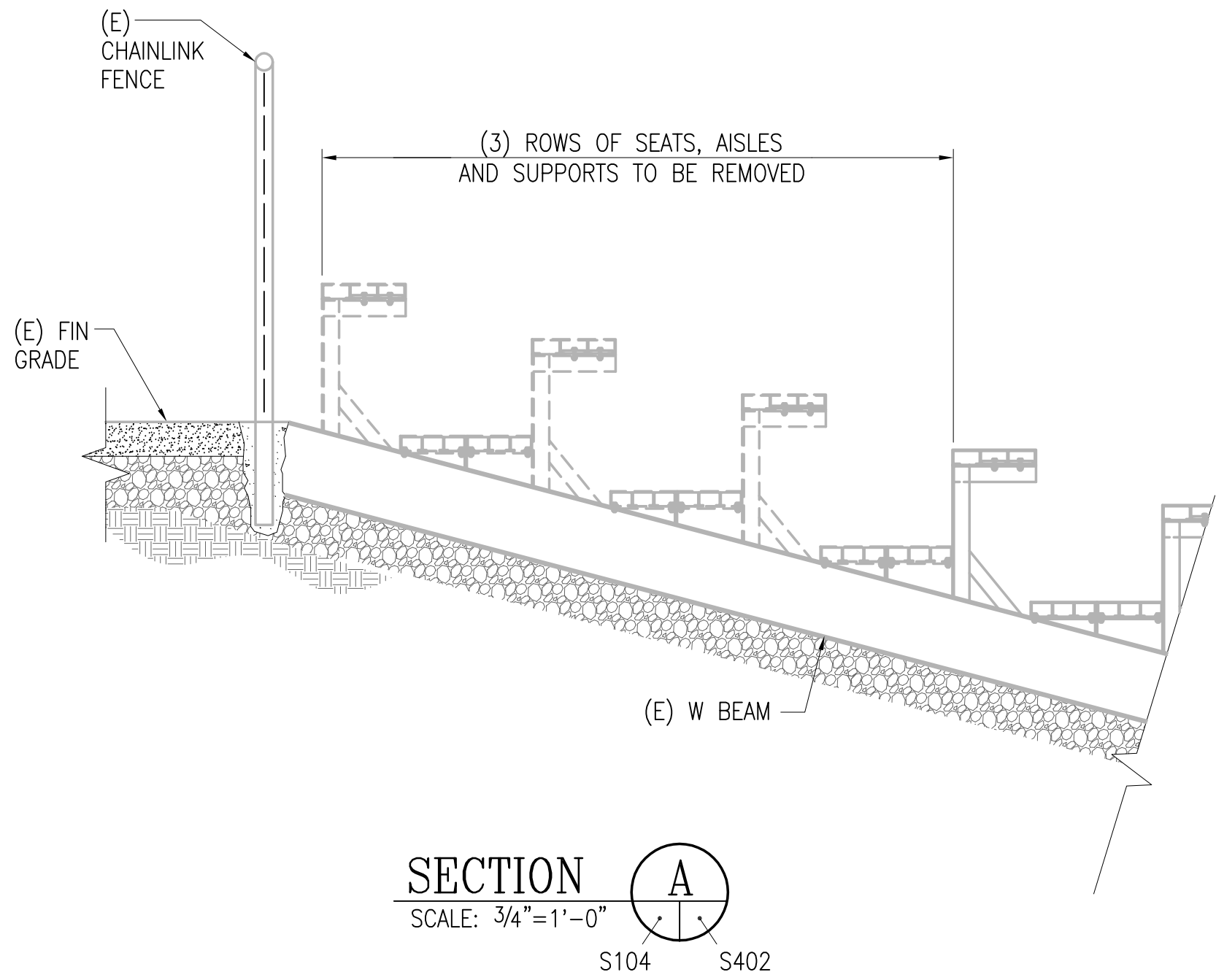
PROJECT TITLE
Midlothian Middle School
Bleacher Repair

SHEET TITLE
DEMOLITION AND NEW
ADA PLATFORM PLAN

DATE	FEBRUARY 3, 2006
H&A PROJECT NO.	3979.31
CLIENT PROJECT NO.	-
SCALE	1/4"=1'-0"
DRAWN BY	RSR
CHECKED BY	DCC
APPROVED BY	EJA
SHEET NUMBER	S101

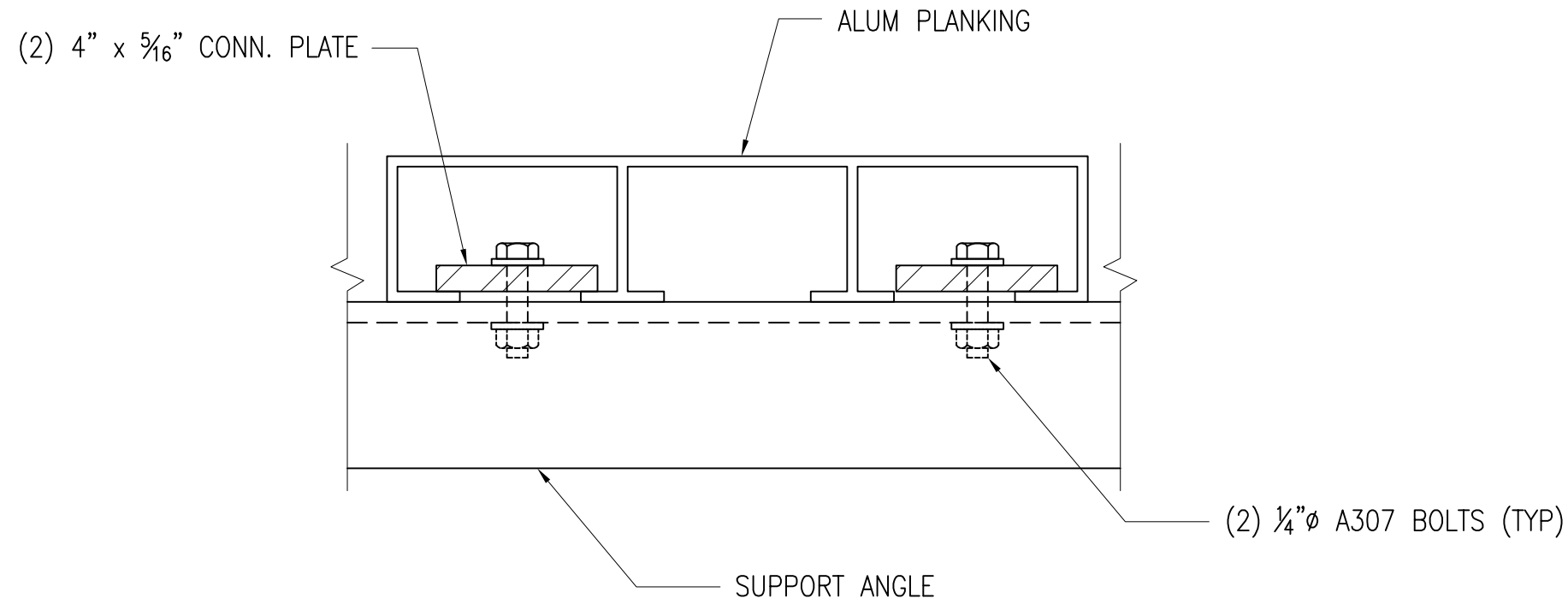
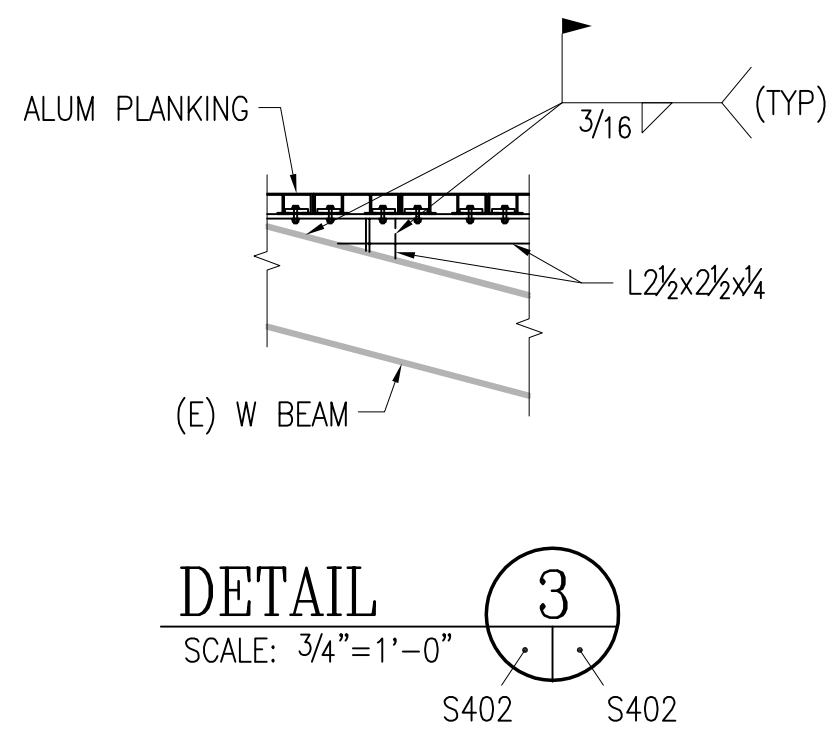
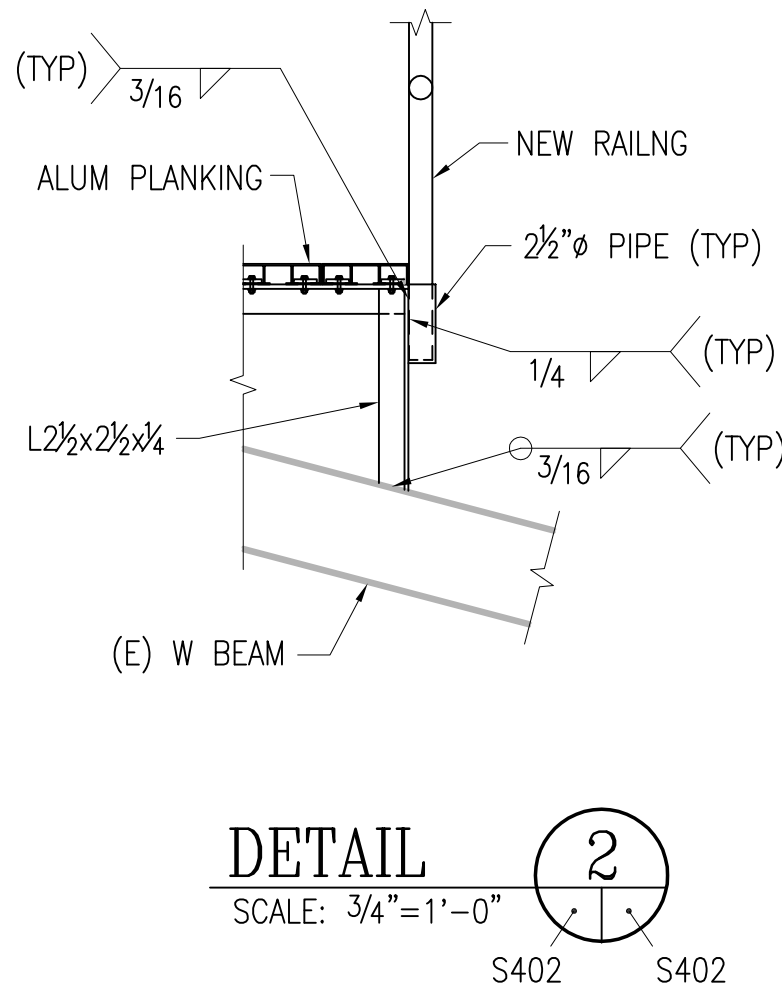
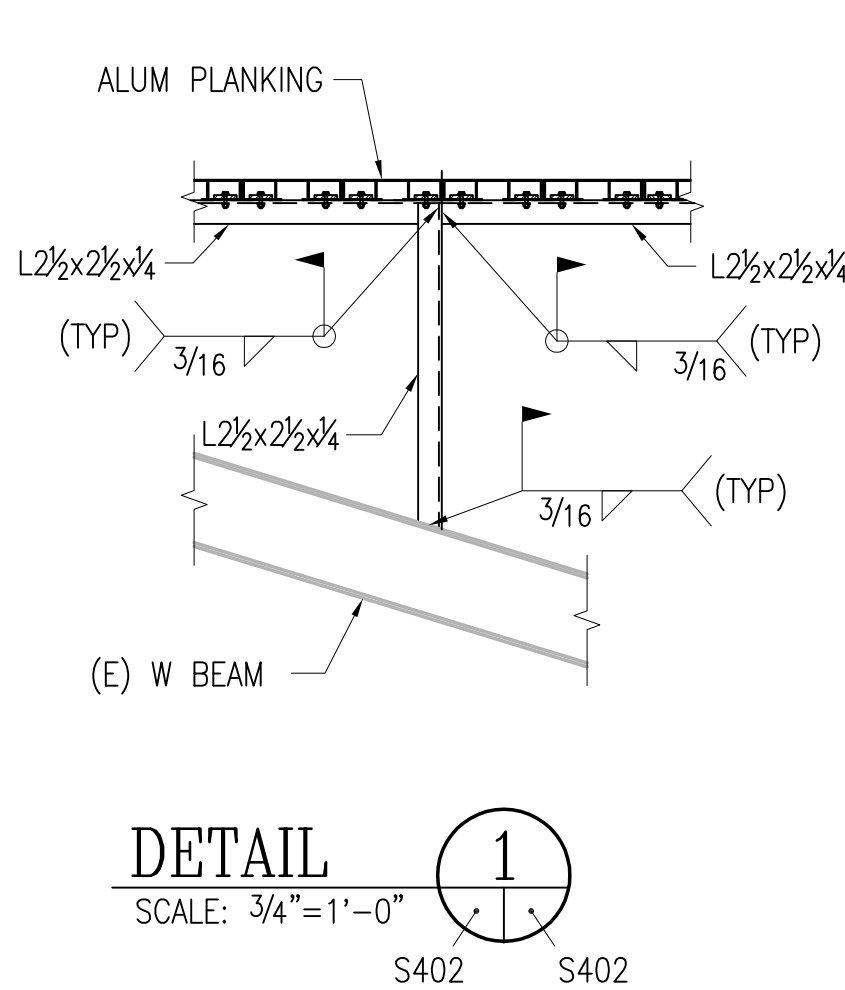
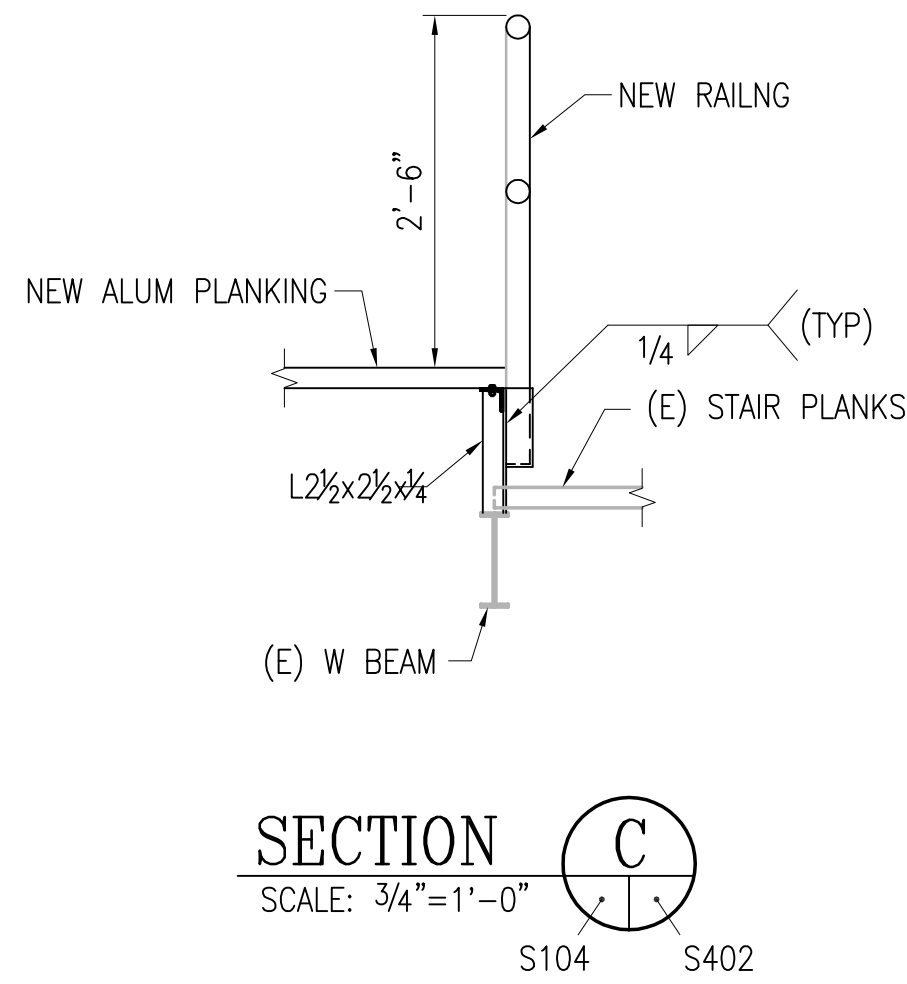
REV	DATE	DESCRIPTION
1	02-24-06	PER COUNTY COMMENTS

Plot Date/Time: 25Apr2006 1:3:53 Filename: P:\Projects\397931\Stru\Midlothian\397931S403.dwg SCALE: 16 User: dcc



NOTES:

1. PROVIDE WOOD BLOCK AS FILL BETWEEN GRADE AND FIRST PLANK.



TYPICAL FLOOR PLANKING CONNECTION

SCALE: NONE

NOTES:

1. CONNECTION TYPICAL AT ALL SUPPORTS ANGLES.
2. PROVIDE ISOLATION BARRIER BETWEEN ALUMINUM AND STRUCTURAL STEEL.

DESCRIPTION
102-24-06 PER COUNTY COMMENTS

REV
1

PROJECT TITLE
Midlothian Middle School

Bleacher Repair

SHEET TITLE

SECTIONS AND DETAILS

DATE

FEBRUARY 3, 2006

H&A PROJECT NO.

3979.31

CLIENT PROJECT NO.

-

SCALE

3/4"=1'-0"

DRAWN BY

RSR

CHECKED BY

DCC

APPROVED BY

EJA

SHEET NUMBER

S400